PAPER TRADE
JOURNAL
CONVERTING ISSUE
November 12, 1954

WOOD PULP

G

Established 1886

"What a man *kens*, he *cans*."
CARLYLE

Always ready to absorb new concepts and apply new methods, this country's industries are justly proud of their unmatched "know-how." Paper, the product of the Pulp and Paper Industry, disseminates the *knowledge* on which all enterprises *act*.

GOTTESMAN & COMPANY
— INCORPORATED —
100 PARK AVENUE • NEW YORK 17, N. Y.
EUROPEAN OFFICES: Birger Jarlsgatan 8, Stockholm, Sweden

HORTON

ELEVATED TANK INSTALLED AT ALASKA PULP MILL

Shown at right is a 150,000-gal. Horton® ellipsoidal bottom elevated tank under construction for the Ketchikan Pulp and Paper Company at Ward Cove, Ketchikan, Alaska. Built in standard capacities from 15,000 to 500,000 gallons, Horton elevated tanks of this type provide a water supply that is ever available for general service needs, plant processing and fire protection. Other CB&I structures at the Ketchikan Pulp Plant includes three spherical acid accumulators.

When a need develops at your mill for digesters, accumulators, chip tanks, blow tanks, an elevated water tank or any of the special steel plate work structures that are required for the efficient and profitable production of good pulp, turn your problems over to CB&I engineers. Write our nearest office for estimates or quotations on any structure that you need. There is no obligation on your part.

150,000-gal. Horton elevated tank under construction at the Ketchikan Pulp and Paper Co., Ward Cove Ketchikan, Alaska.

CHICAGO BRIDGE & IRON COMPANY

Atlanta, 3 ..... 2142 Healey Building
Birmingham, 1 ..... 1559 North 50th Street
Boston, 10 ..... 1064—201 Devonshire Street
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Cleveland, 15 ..... 2255 Midland Building
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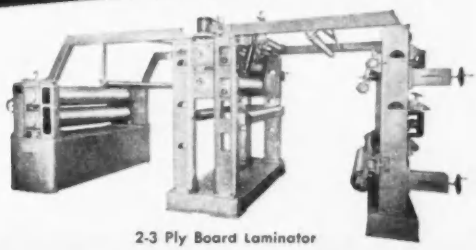
Los Angeles, 17 ..... 1561 General Petroleum Building
New York, 6 ..... 3333—165 Broadway Building
Philadelphia, 3 ..... 1665—1700 Walnut Street Building
Pittsburgh, 19 ..... 3234 Alcoa Building
Salt Lake City, 4 ..... 567 West 17th South Street
San Francisco, 4 ..... 1577—200 Bush Street
Seattle, 1 ..... 1368 Henry Building
Tulsa, 3 ..... 1666 Hunt Building

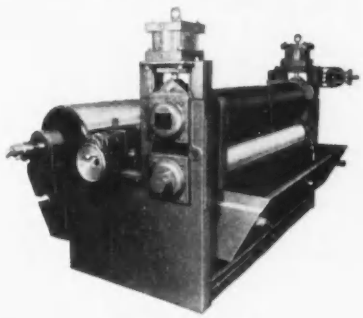
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY, and GREENVILLE, PA.

In Canada: HORTON STEEL WORKS LIMITED, FORT ERIE, ONT.

7 NEW ADDITIONS TO DILTS LINE DURING 1954



2-3 Ply Board Laminator

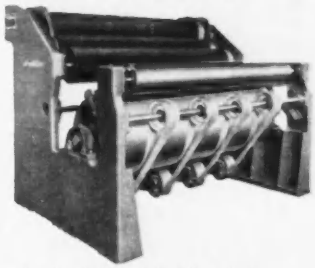


2 Roll Heavy Duty Waxer

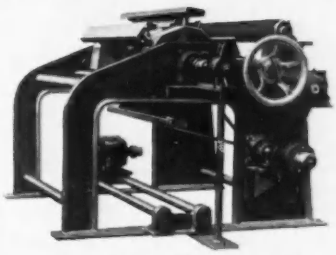
Dilts ever-expanding line of converting equipment is constantly being improved and modernized to give you exactly what you need to lower costs and increase the production of your plant.

Regardless of what your converting operations may be it's smart business on your part to investigate Dilts' complete line. Write to Dilts . . . ask for new 12 page catalog No. 322.

"Contracoater" with "Warren Air Knife"

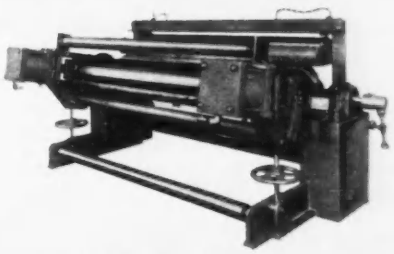


Tension Holdback for Clay Coater



Automatic Collapsible Register Reel

Dilts



Model PL-400 Polyethylene Laminator

Model 52 Unwind Reels

THE BLACK CLAWSON COMPANY
DILTS MACHINE WORKS DIVISION
FULTON, NEW YORK

NEW proportioning PUMP

ALLIS-CHALMERS Paper Stock PUMPS

Operates at any point on the curve — without expensive speed controls — without valves to clog or collect dirt

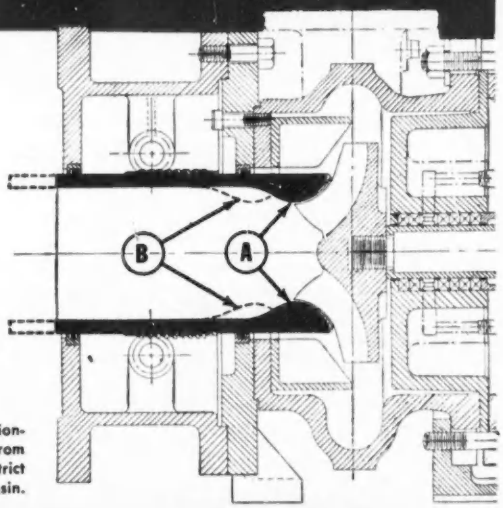
New *ACAP* paper stock pumps feature a revolutionary new internal bypass control which comes bolted on in place of the suction flange of a single-suction pump.

Mere movement of its actuating mechanism (automatic or manual) slides the bypass cylinder toward or away from the impeller. See diagram. The clearance between the pump end of the cylinder and the impeller determines the amount of stock recirculation — regulates the flow at the discharge nozzle. With the cylinder at position *A*, recirculation is at a minimum, flow at a maximum. At position *B*, recirculation is at a maximum, flow is zero.

An infinite variety of intermediate settings between these two extremes provide variable control of capacity or head over the entire range of the pump — without any need to regulate the speed of the pump itself. Furthermore, it's now possible to buy an oversize pump and operate it with the bypass a little overset to maintain a degree of constant recirculation for blending.

A-4417

Gives you positive, accurate control of stock delivery



ACAP is an Allis-Chalmers trademark.

For complete details on new ACAP pumps for proportioning, fan service or head box supply — in capacities from 0 to 35,000 gpm, heads 0 to 100 ft — contact your District Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-C ALLIS-CHALMERS

ALLIS-CHALMERS

SUBSCRIPTIONS

U. S. $5.00 per year to pulp and paper mill and converting plant personnel, others $7.50. U. S. Possessions and Canada $7.00. Latin American Countries, $15.00, all others $20.00. Single copies of regular editions are 25c. This issue $1.00.

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REMEMBER THESE DATES

NOV. 17-19: TAPPI Corrugated Containers Conference, General Oglethorpe Hotel, Savannah, Ga.

JAN. 24-26: Plant Maintenance & Engineering Conference, International Amphitheatre, Chicago, Ill.

FEB. 20-25: APPA Annual Meeting, Waldorf-Astoria Hotel, New York, N. Y.

FEB. 21-24: TAPPI Annual Meeting, Commodore Hotel, New York, N. Y.

MAY 18-21: Third Western International Meeting of the Pulp and Paper Industry, Empress Hotel, Victoria, B. C.

JUNE 14-16: American Pulp and Paper Mill Superintendents Assn. Annual Meeting, Netherlands Plaza Hotel, Cincinnati, Ohio.

PAPER TRADE JOURNAL

Published Weekly Since 1872

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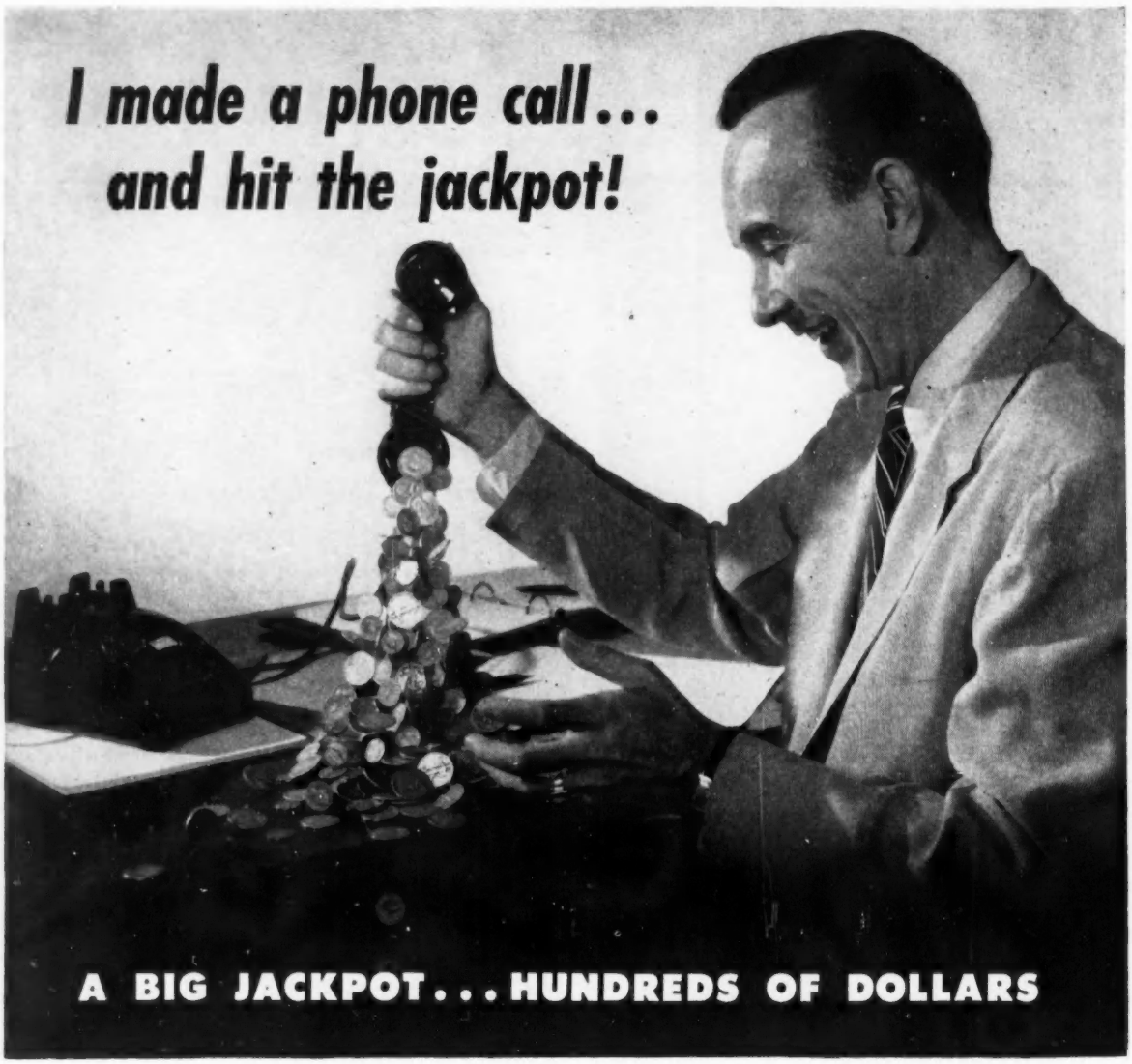
LOCKWOOD TRADE JOURNAL CO., INC., 15 W. Forty-Seventh St., N.Y. 36

GEORGE E. LOCKWOOD, President and Treasurer — Phone: Plaza 7-2370 — ARTHUR E. GORDON, Vice-President — FREDERICK E. WINKLER, Secretary

I made a phone call... and hit the jackpot!



A BIG JACKPOT... HUNDREDS OF DOLLARS

IT happened this way: We added some new equipment and operations to the plant recently, and it was my responsibility to specify the pipe and tubing. Since I was dealing with higher temperatures and pressures than we'd ever handled before, I decided on a high alloy steel in a heavy-weight seamless grade — the highest and most expensive tubing analysis, incidentally, that I had ever specified.

Well, I called National Tube to place the order, and got to chatting with one of the engineers. When I told him, frankly, that I wasn't too certain of the analysis I'd chosen, he immediately offered to come over and check the blueprints with me. And that was how I hit the jackpot.

The National Tube engineer showed me where, in my effort to keep on the safe side, I had specified an alloy far more costly than the conditions of the job required. The *correct* analysis that he worked out suited the installation perfectly, and it saved us hundreds of dollars.

So you see there's no excuse for buying blind. Let National Tube work with you, and you'll get the right pipe or tube every time—at the least cost to you.

NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.
(Tubing Specialties)

COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

NATIONAL *Seamless* PIPE AND TUBES

WALLS WITHOUT WELDS

UNITED STATES STEEL

What goes into a Dixie Cup?

Into a Dixie Cup goes a variety of hot and cold foods and drink... Cokes, soda and malteds in the flat bottom cold drink cup shown above for the younger set – in many other sizes and types, a wide selection of packaged foods for the home. In the relatively few years since the Dixie Cup Company created the first paper cup, the Dixie Cup has become a national institution.

Today, the Dixie Cup has an every-day role in Industry, too. Blanketing the United States, five Dixie Plants turn out the many different sizes and types of Dixie Cups used by Industry for serving food and drink. Dixie Cups assure clean, safe service at water coolers, in cafeterias and restaurants, in automatic drink vending machines, for pre-packaged foods, and for a variety of other important uses.

Into the making of a Dixie Cup go science and skill born of many years' experience; the finest modern machinery; raw materials to feed these machines – carefully selected paper, ink and adhesives.

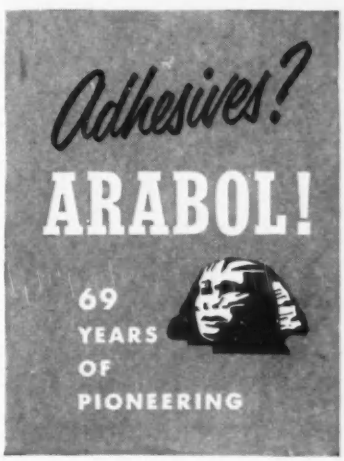
On the subject of adhesives, Dixie says, "Arabol Adhesives meet the exacting quality requirements which make Dixie Cups perfectly safe and economical for both Industrial and home use!"

The multi-billion dollar Paper Converting Industry is one of a hundred industries in which Arabol is privileged to serve the leaders. In 69 years of pioneering, more than 10,000 adhesives formulas have been developed in our five laboratories – each meeting a specific need for a special adhesive in some step of a customer's operation.

Somewhere in your business, you use adhesives for the making, labeling, packaging or shipping of your product. The cost of fine adhesives is low – so low, in fact, that you can easily afford adhesives made to your specifications for each of your requirements.

Somewhere *near* your business, one of seven Arabol plants and four warehouses stands ready to supply your regular adhesives needs – to furnish prompt and efficient help in meeting your new ones. And in the event of disaster or economic need in one area, you are served from another plant; you are assured of uniform quality and service.

We invite the opportunity to submit samples for you to test in your own plant – under your particular working conditions – for your specific requirements, whatever their nature. That is the one kind of testing that assures you of satisfactory results. Your inquiry to Department 20 will bring a prompt response.



THE **ARABOL** MFG. CO.

... a nationwide organization serving major users of industrial adhesives

EXECUTIVE OFFICES: 110 E. 42nd ST., N. Y. 17, N. Y.
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PORTLAND, Ore. • ITASCA, Tex. • CINCINNATI
LONDON, Eng.

PENFORD GUMS

(STARCH HYDROXY ETHYL ETHERS)

(U. S. Patent Numbers 2,516,632; 2,516,633; 2,516,634)

PENFORD GUMS are the products of an exclusive patented process which makes it possible to attach hydroxy ethyl groups to starch molecules by strong ether linkages resulting in entirely new products—hydroxy ethyl ether starches. These perfected synthesized starch derivatives have the desirable characteristics of both water soluble film forming polymers and starch.

The unusual and highly advantageous properties contained in PENFORD GUMS are providing a solution of many quality and production problems.

PENFORD GUMS have established new standards of perfection in these operations:

1. CALENDER USAGE — PENFORD GUM 280 definitely increases Mullen on all board furnishes. PENFORD GUMS 240, 250, and 260 are widely used for finishing board later printed with most exacting high gloss inks.
2. TUB OR SIZE PRESS — Various grades of PENFORD GUM are used for improving strength, finish, controlling densometer, and for preventing excessive penetration of other finishing materials like lacquer, wax, ink, coatings, etc.
3. PIGMENTED SIZE PRESS COATING— PENFORD GUM 250 is used as the sole adhesive for producing coated offset paper and for coated board which may be wet finished on the calenders.
4. ON- AND OFF- MACHINE COATINGS — The high fluidity PENFORD GUMS, either as-is or resinated, are excellent coating adhesives assuring level coatings of high pick.
5. WET END ADDITION — PENFORD GUM 300 is a brand new member of the hydroxy ethyl ether class which is low temperature swelling and disperses without lumping in the fiber furnish but yet is completely gelatinized on the fastest machine. It requires no cooking and may be added dry or in liquid slurry.
6. ADHESIVES — A number of the PENFORD GUMS are used in adhesive formulations such as regular or waterproof solid fiber, corrugated board, bags, multiwall sacks, tubes, and drums. A special formulation has been developed for high speed layflat flexible adhesive.

PENICK & FORD, LTD.,

Incorporated

420 Lexington Ave., New York 17, N. Y.

806 Bona Allen Bldg., Atlanta, Ga. Cedar Rapids, Iowa

for GREAT NORTHERN'S new #5 machine

BY BELOIT IRON WORKS

FIVE CARLOADS of

"Rubber Rolls with a Reputation"

BY

STOWE-WOODWARD, Inc.

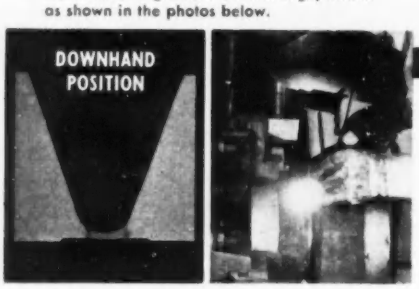
Craftsmen in rubber rolls

NEENAH, WISCONSIN - NEWTON 64, MASS. -

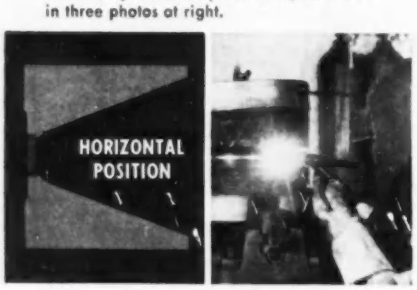
INERT GAS TUNGSTEN ARC-WELDING
ON HIGH-TEMPERATURE, HIGH-PRESSURE PIPING

We've Been Doing It For Years

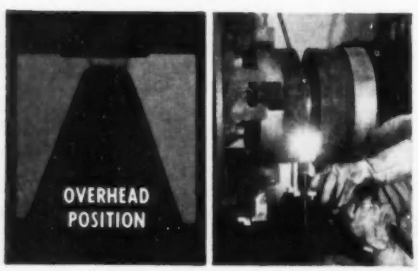
With proper groove design, and "free flow" of inert gas, internal contour of root bead is maintained regardless of welding position as shown in the photos below.

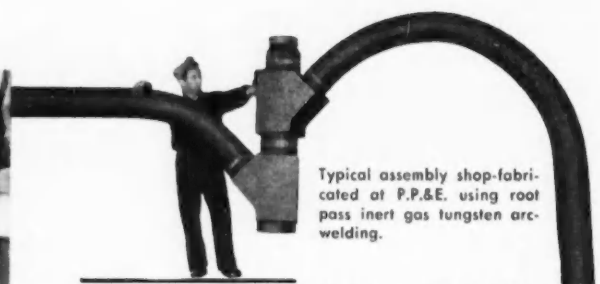


Inert gas tungsten arc root welds, made regularly in P.P.&E.'s laboratories, serve as a check on production procedures, as shown in three photos at right.



Welder's skill is an important factor in obtaining full penetration and fusion with proper internal contour of root bead.





Typical assembly shop-fabricated at P.P.&E. using root pass inert gas tungsten arc-welding.

First pass welding, by the inert gas shielded arc-welding method, is a standard production operation at Pittsburgh Piping. But — simply shielding the internal surface of the root bead with inert gas under "controlled" pressure does not automatically assure a sound joint. The position of welding, welding groove details, and the welder's skill are among the many critical factors.

Pittsburgh Piping's process provides an inert gas shield against the atmosphere on both internal and external surfaces of the root pass. This procedure, combined with other P.P.&E. processes, eliminates need for backing rings and double butt welding, and produces a sound, clean joint having a remarkably uniform root bead of proper contour.

Applicable to all types of power and process piping — inert gas tungsten arc-welding is another of the many techniques which have been thoroughly investigated and checked in P.P.&E. experimental laboratories before being generally used. It has been a successfully-applied production process at Pittsburgh Piping for years.

Pittsburgh Piping
AND EQUIPMENT COMPANY
10 Forty-Third Street — Pittsburgh, Penna.

Atlanta.....Whitehead Building	Cleveland...Public Square Building
Boston.....10 High Street	Houston...Heights State Bank Bldg.
Charlotte.....221 Builders Building	Los Angeles.1830 N. Alexandria Ave.
Chicago.....Peoples Gas Building	New Orleans.....P. O. Box 74
New York.....Woolworth Building	

PP-6

BETTER TOWELS IN ANY HANDS ...THANKS TO UFORMITE 711

This little boy doesn't know it, but he is reaching for a towel made with UFORMITE 711. So are millions of people all over the country —in both home and factory.

Wet strength is a sales advantage in many paper products, such as bags, towels, facial and other tissues, blueprint paper and map paper. UFORMITE 711 provides wet strength for as little as $4 per ton of paper. You can boost wet tensile and wet Mullen, improve fold, wet rub and scuff resistance. No special equipment, acid pre-treatment or change in regular papermaking processes are required.

UFORMITE 711 can be used with bleached or unbleached kraft, sulfite, and sulfite-groundwood combinations. It increases sizing efficiency and aids retention of beater additives.

Whatever types of paper you manufacture, it will pay you to look into the UFORMITE family of resins. Complete data are available upon request.

OTHER CHEMICALS FOR THE PAPER INDUSTRY

RHOZYME BB and E-5—for enzyme conversion of starch.

TAMOL N—for effective pitch control—dispersing of pigments.

TRITON—Surface-active agents with a score of uses in paper manufacture.

The Hydrosulfites—Reducing agents for stripping rag stock or for bleaching groundwood.

HYAMINE—Deodorants and bactericides.

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

THE RESINOUS PRODUCTS DIVISION

Washington Square, Philadelphia 5, Pa.

Representatives in principal foreign countries

UFORMITE, RHOZYME, TAMOL, TRITON, HYAMINE *are trademarks, Reg. U.S. Pat. Off. and in principal foreign countries.*

Perkins Rolls—

performing equally well in this wide calender as in many smaller calenders—Perkins engineered and built.

B. F. PERKINS & SON, Inc.

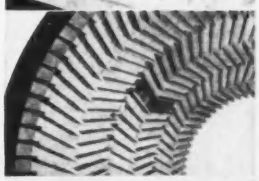
HOLYOKE, MASS., U.S.A.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

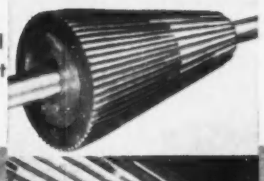
Why you rely on Emerson Jordans

Every part precison machined to close tolerances under rigid control

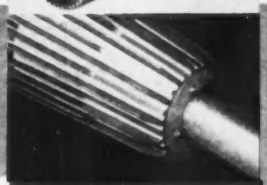
Box pattern base for strength and to minimize vibration



Bolton exclusive shell filling riveted for extra strength

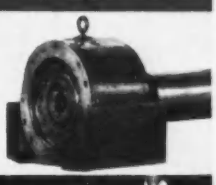


Bolton Wedgeless Plug of cast steel with stainless jacket

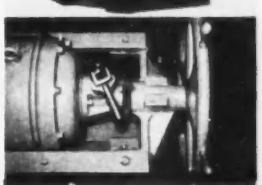


Same plug slots take various filling sizes

Plug shaft positively centered



Sleeve mounted Timken bearings for easy removal



Precision plug adjustment for longer filling wear

Specially designed for economy in replacing parts

Eight standard models — ask us about special models

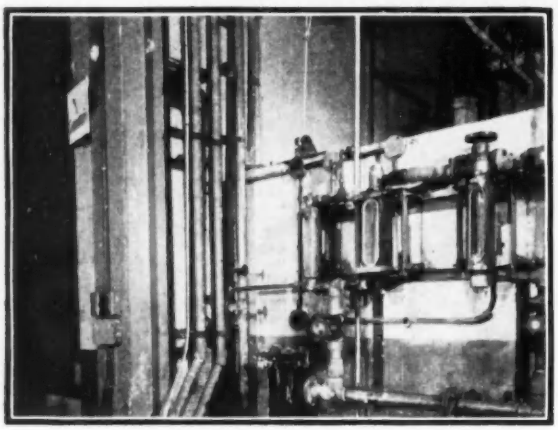
John W. BOLTON & Sons, Inc.

EMERSON MANUFACTURING DIVISION

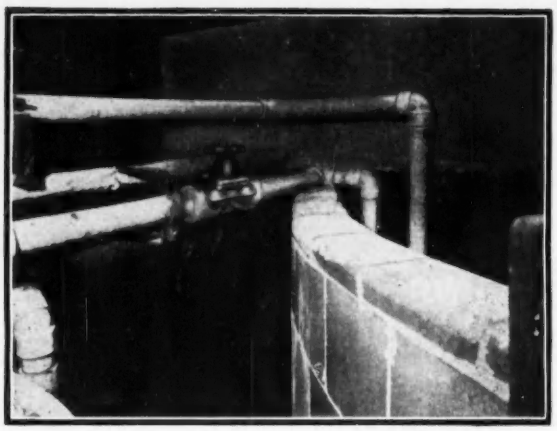
Lawrence, Massachusetts, U.S.A.

Paper mill licks corrosion problems with U. S. Uscolite plastic

Section of U. S. Uscolite plastic piping forming a manifold carrying highly corrosive alum from storage tanks. Here the alum line is broken up to carry it to several paper machines. Uscolite shows no sign of corrosion, after 2 years' service.



Uscolite piping and flanges on the lower bleach line. Two interchangeable pumps draw the bleach liquor from the bottom of the storage tank to the paper machines. The bleach liquor corrodes the insides of metal pipe—and the fumes, the outside. Uscolite pipe shows no signs of corrosion after 2 years of wear.



Uscolite piping taking bleach liquor from the storage tanks —via the upper bleach liquor line. Here the Uscolite pipe replaced metal pipe and rubber-lined pipe. Bleach liquor must be fed at an even rate. Unlike metal pipe, Uscolite piping does not build up internal deposits, and thus permits steady flow and control at all times.

Uscolite pipe and fittings are made in broadest and largest line of stock sizes on the market. Sizes run from ½" to 6".

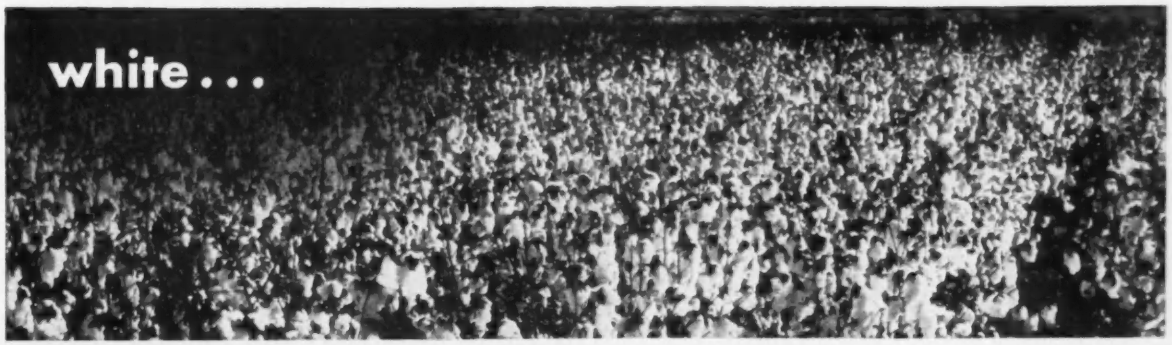
Uscolite® plastic piping, fittings, flanges, deflectors, valves and fume ducts will handle any chemical used in paper mills, including alum, bleaches, brines, and chlorine. A product of United States Rubber Company, Uscolite is extremely light in weight, yet has very high impact strength. It is threaded and assembled with ordinary piping tools—*without* special preparation. Immediate delivery of standard sizes of pipe and fittings. The Uscolite Hills-McCanna valve is also available. Call any of the 27 "U. S." District Sales Offices or write to address below.

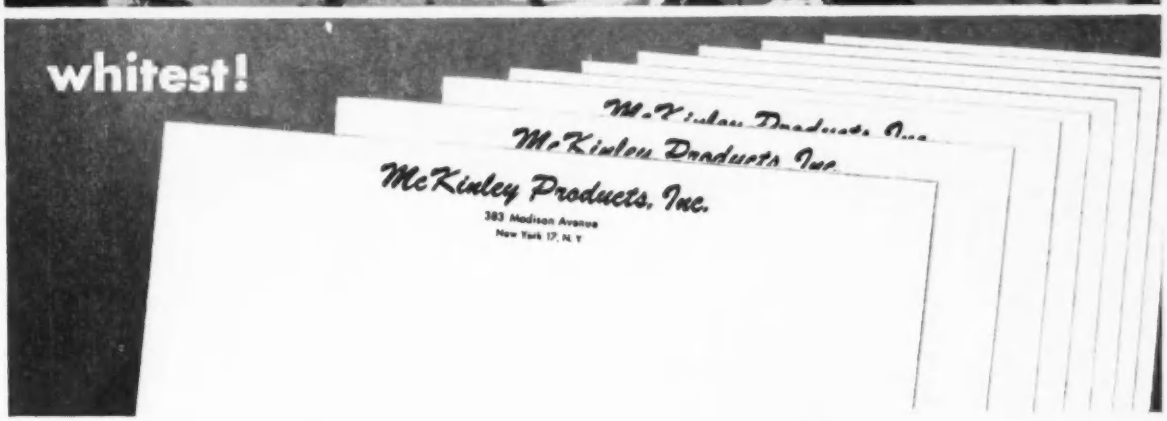
"U.S." Research perfects it..."U.S." Production builds it...U.S. Industry depends on it.

UNITED STATES RUBBER COMPANY

MECHANICAL GOODS DIVISION · ROCKEFELLER CENTER, NEW YORK 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Grinding Wheels • Packings • Tapes Molded and Extruded Rubber and Plastic Products • Protective Linings and Coatings • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting





NEW Du Pont Paper White BN will make your paper whiter than words — or pictures — can say

You'll have to see it to believe it—a dye that makes paper so white that most of today's papers look dull and gray by comparison!

White as a field of cotton at picking time? No. There never was a cotton boll *this* white.

White as new-fallen snow? Frankly, that doesn't describe it either. The only way you can see just how white paper can be is to send in the coupon below for a sample of paper dyed with new Du Pont Paper White BN.

DU PONT REG. U.S. PAT. OFF. *Du Pont Dyes*

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

Fill in This Coupon and Mail Today for Samples

E. I. du Pont de Nemours & Co. (Inc.)
Dyes and Chemicals Division—N-11496
Wilmington 98, Delaware

Gentlemen:

Please send me samples of paper dyed white with new Du Pont Paper White BN.

NAME_____ TITLE_____

FIRM_____

ADDRESS_____

CITY_____ STATE_____

WEST END 58% SODA ASH is FREE-FLOWING

Air-separation gives West End ash exceptional uniformity of particle size and density resulting in outstanding free-flowing characteristics. This uniformity tends to prevent classification and caking under normal handling and storage conditions. When put into process, West End ash is free-flowing and non-dusting.

NON-DUSTING WHEN WE SHIP IT — NON-DUSTING WHEN YOU USE IT!

West End's unique classifying system . . . a combination of air-separation and screening . . . insures complete control of dustiness in the product. Excessively coarse particles are removed. By cutting dust loss to a minimum, West End gives added economy to every industrial process.

In laboratory test, wheat grains freely flow through a ½" funnel at 166 cubic inches per minute. West End 58% Soda Ash in the same test flows at 183 cubic inches per minute.

Orders Filled Immediately

Large stocks of soda ash are kept constantly in storage to fill all requirements promptly. West End's location provides the most rapid and economical shipment of soda ash available to users throughout the West.

West End's fleet of leased hopper cars is always ready to serve.

30 minute in-and-out loading for bulk trucks at any hour of day or night through "serve yourself" delivery.

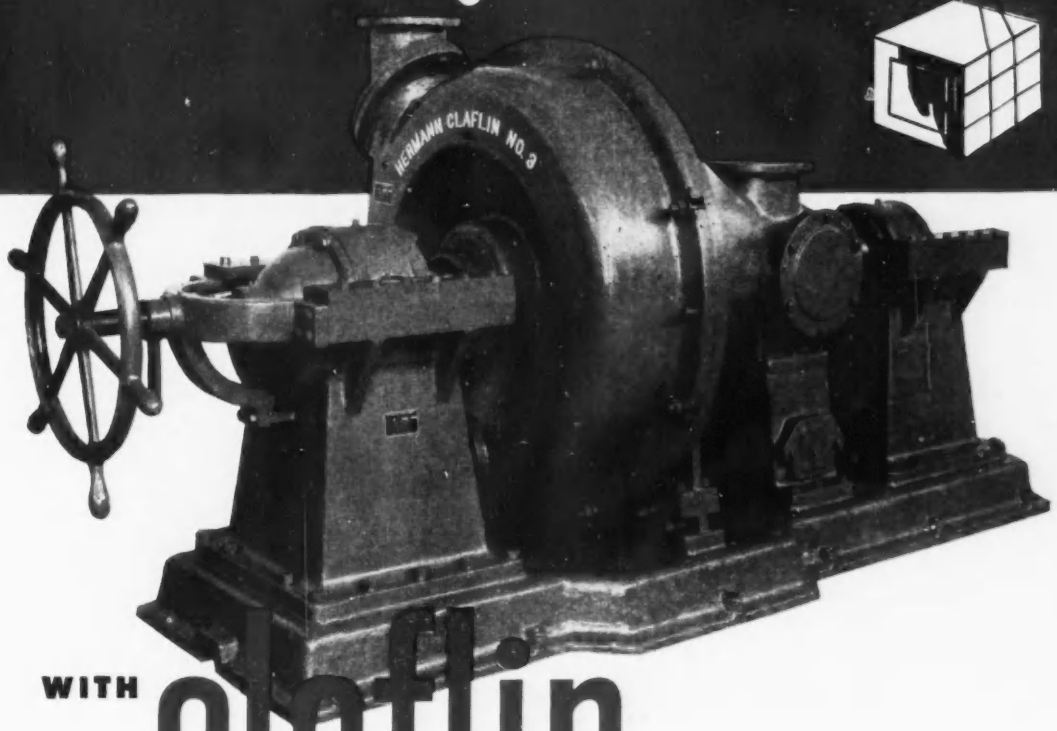
Write for samples, prices and technical data.

WEST END CHEMICAL COMPANY

SODA ASH · F. M. SMITH BRAND BORAX · HYDRATED LIME

Executive offices: 608 Latham Square Building, Oakland 12, California · Plant: Westend, California

Tonnage Goes Up... Costs Go Down



WITH **Claflin** CONTINUOUS BEATERS AND REFINERS

Claflin refiners and beaters have proven time after time that they produce more pulp . . . of higher quality . . . for less cost.

Pulping costs are less because there is less loss through rejects and re-refining.

Power Costs are cut from the 3-4 hp. days/ton average to 2.0 hp. days/ton. In some cases Claflins are doing the job for even less.

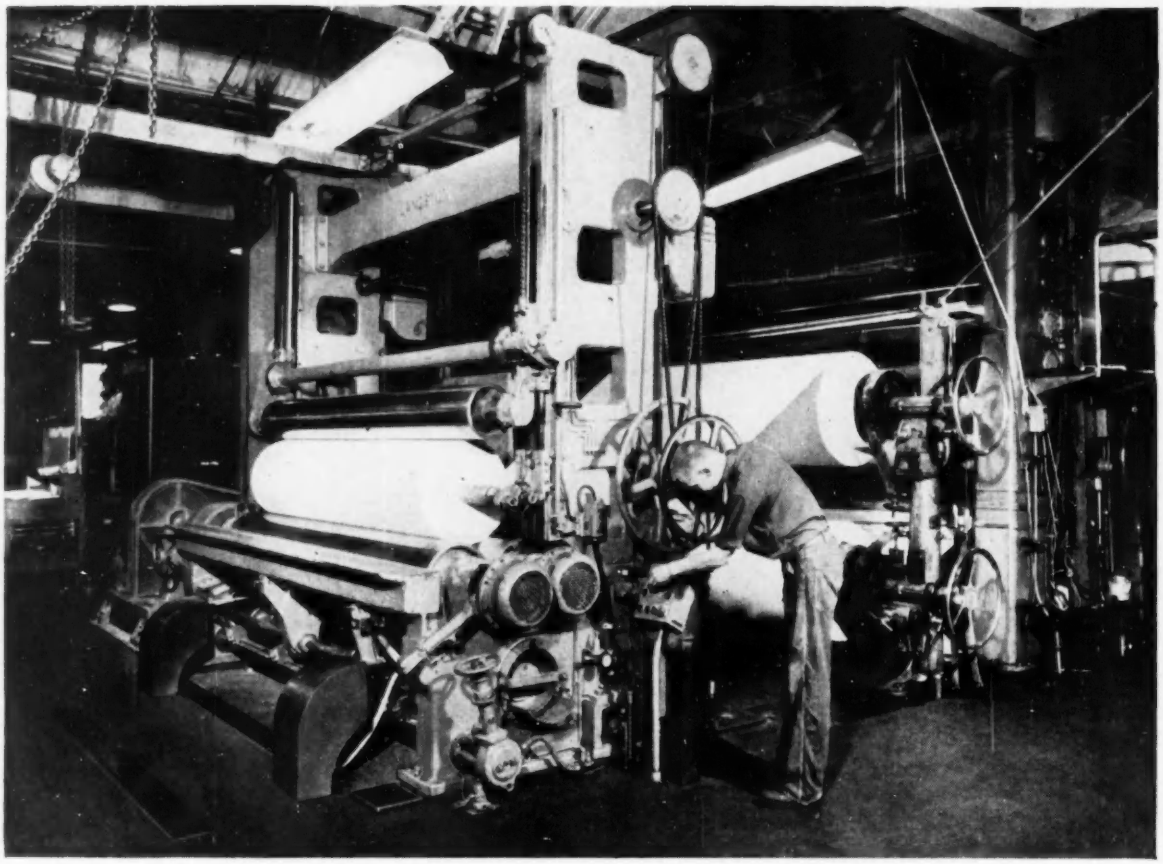
Quality and paper strength increased. Pulp that is "Claflinized" forms well on the paper machine. No lumps . . . no clots . . . no clumps.

No foaming problems. Claflins operate on a closed system. Air is not introduced into the refining cycle at *any* point.

Write for full Information Today!

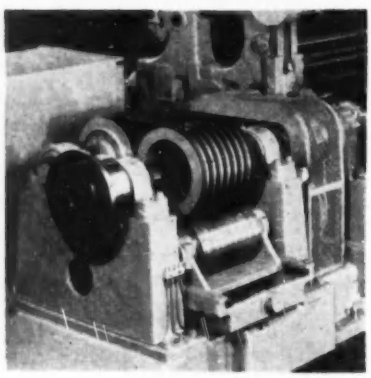
claflin CONTINUOUS BEATERS AND REFINERS

THE HERMANN MANUFACTURING COMPANY — LANCASTER, OHIO



Typical tough winding job is this fine writing paper handled by Langston Slitter & Winder at Wausau Paper Mills Co., Brokaw, Wis. Engineered controls enable precise adjustment of rider roll pressure and drum overspeed for consistent, optimum roll density.

Facts about roll density and **Langston Slitters & Winders**



Variable pitch sheave is adjustable on high speed Langston Winders to vary overspeeds of rear drum and rider roll simultaneously. Because they are quiet, require little maintenance, and are more efficient than flat belts, only V-belts are used on Langston Winders.

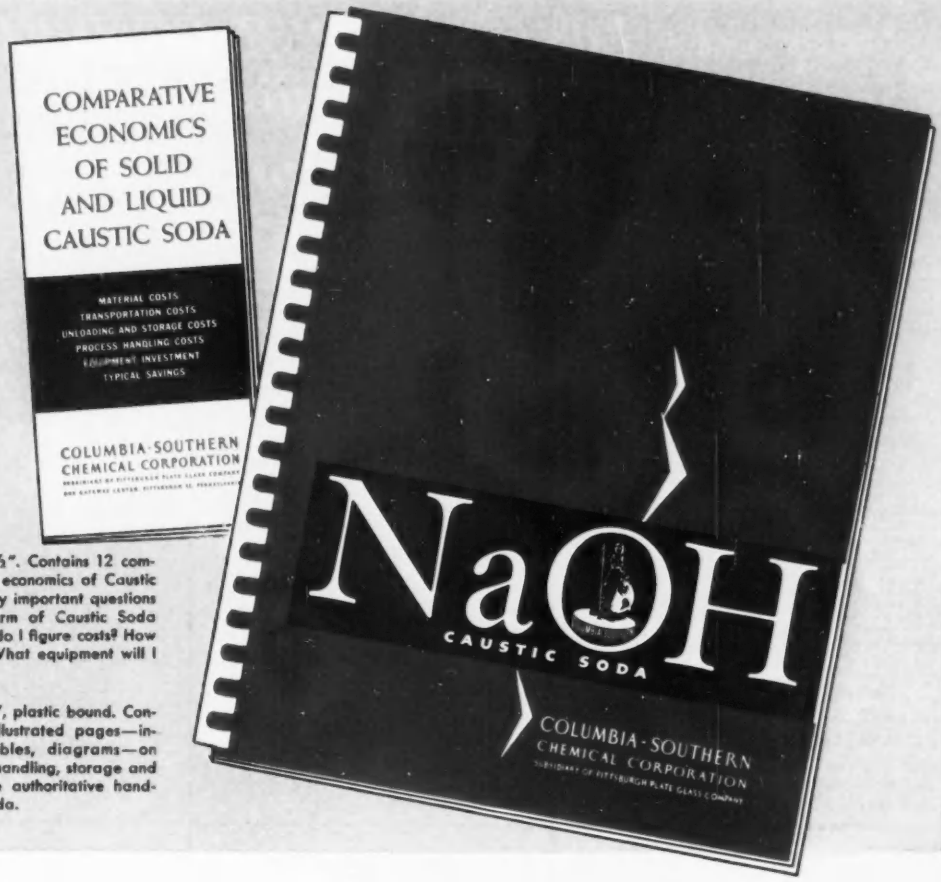
Wind a roll too tight, and it may burst or buckle. Too loose, and it may telescope. There is an ideal roll density for each thickness and strength of paper—which Langston Slitters & Winders are designed to provide.

Rider roll pressure, for example, is variable over a wide range and can be closely controlled to suit varying kinds of paper. This is especially important at the start of the wind—before the roll picks up weight of its own.

On high speed Langston Winders using V-belt drive, controllable overspeeds of rear drum and rider roll keep sheet constantly taut as it is wound. Tension can be further controlled within close limits by one of a variety of different braking systems on the unwind stand.

Other advantages of Langston Slitters & Winders include the clean-cutting, shear-cut slitters, strong sturdy bedplate and sideframes, and hydraulic roll ejector and shaft loader available on most models. Sizes to 196 inches wide and speeds to meet your specifications. Write for full information. Samuel M. Langston Co., Camden 4, N.J.

LANGSTON *Leadership...by design*



Booklet, 3¾" x 8½". Contains 12 compact pages on the economics of Caustic Soda. Answers many important questions such as, "What form of Caustic Soda should I buy? How do I figure costs? How much will I save? What equipment will I need?"

Manual, 8½" x 11", plastic bound. Contains 64 factual, illustrated pages—including charts, tables, diagrams—on analysis, shipping, handling, storage and unloading. It is the authoritative handbook on Caustic Soda.

Do you have these two valuable books on caustic soda?

If your work involves the handling, use, purchasing, or economics of Caustic Soda, and you do not have these books, you are urged to write for your free copies today. Ask for "Caustic Soda Manual" or "Caustic Soda Economics Booklet." If you want both, please specify. Use company stationery and send your request to Columbia-Southern Chemical Corporation, One Gateway Center, Pittsburgh 22, Pennsylvania.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION
SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY
ONE GATEWAY CENTER · PITTSBURGH 22 · PENNSYLVANIA

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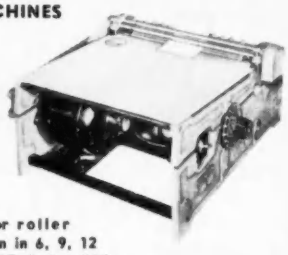
America's Largest PAPER CONVERTERS use POTDEVIN *equipment to reduce production costs!*

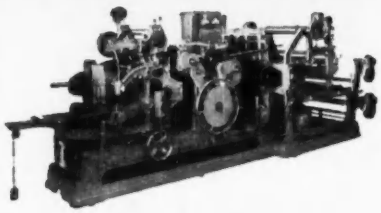
SELF-OPENING-SQUARE BAG MACHINES

High speed production of 11" x 6" x 2" shopping bag or multi-wall baler bags.

COATING MACHINES



Ductor roller design in 6, 9, 12 and 15 inch widths.



CELLOPHANE BAG MACHINERY

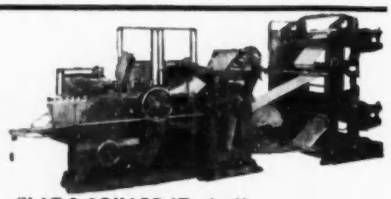
Models for single, duplex, flat-and-square, satchel-bottom bags.

Multi-Wall Specialty BAG MACHINES

For single-wall, duplex or triplex S.O.S. bags or satchel-bottom sacks. Speeds up to 250 per min.

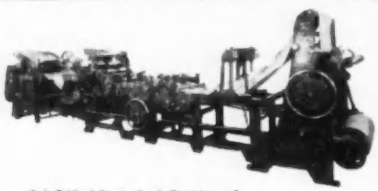
Aniline Ink PRINTING PRESSES

Presses from 10" to 40" web widths, one to 6 colors.



FLAT & SQUARE (Tucked) PAPER BAG MACHINES

High speed production of grocery, notion, millinery, shipping container and large specialty bags. Adjustable for large range of sizes.

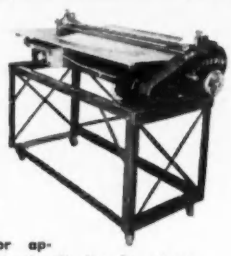


SACK (Satchel-Bottom) PAPER BAG MACHINES

Wide range of sizes for making single or multi-wall poultry, charcoal, potato, flour sacks and shopping bags.

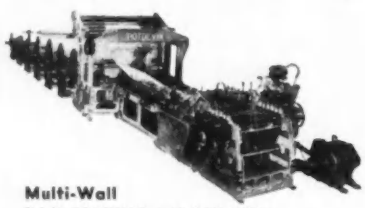
OIL INK PRINTING PRESSES

Wide range of types and sizes including one to six colors for drinking cup paper, coffee, sugar, flour bags, cellophane, glassine, parchment, etc.



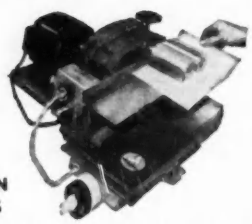
GLUERS for MILL-ROLL HEADERS

Heavy duty 39" and 46" gluers. Patented regulator applies exact amount of adhesive for strong, all-over adhesion.



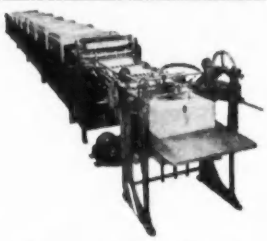
Multi-Wall BAG MAKING MACHINERY

High speed production of 2, 3, 4, 5 and 6 wall heavy-duty bags . . . valve, sewn ends, open mouth, sack, etc.



MARGIN GLUERS

Applies 1/8" to 12" margin of adhesive without oozing at edges. Automatic compensation for materials of varying thickness.



STRIP GLUERS

Automatically feeds, applies glue, dries and delivers to next station for further processing. Adjustable up to 21" wide.

POTDEVIN has been designing and building superior quality equipment for the paper converter since 1893. Consult our engineers on any problem. No obligation. Write for detailed information on any equipment illustrated in this ad.

ESTABLISHED IN 1893 POTDEVIN

POTDEVIN MACHINE CO.

223 North Street, Teterboro, N. J.

Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling.

How BIG should a Jordan be?

Battery of Jones Majestic Jordans at Weyerhauser's Longview, Wash., board mill. This popular high-capacity machine accounts for a large percentage of Jones Jordan sales.

Big enough to do the job required of it! — and the Jones line of eight sizes, from Midget to Leviathan permits selection of exactly the right size and type to meet every requirement.

Built into *all* Jones Jordans are exclusive features developed from more than a century of service to paper mills, which provide maximum operating efficiency, ease of maintenance and low operating cost.

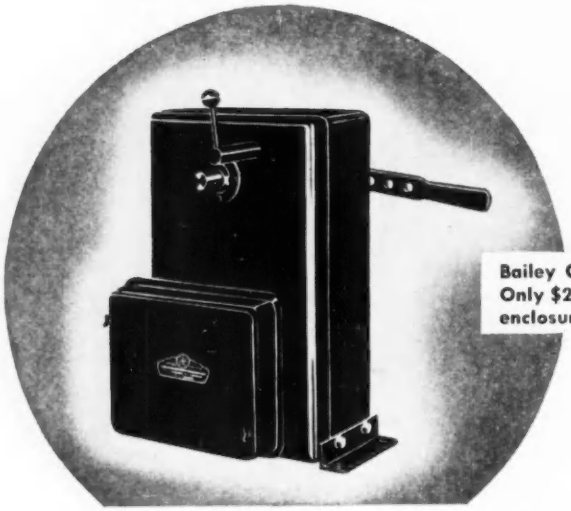
Ask your Jones representative for more information, or write today for Bulletin EDJ-1007A.

E.D. Jones

E. D. Jones & Sons Company
Pittsfield, Massachusetts

BUILDERS OF QUALITY STOCK PREPARATION EQUIPMENT

In Canada: The Alexander Fleck Limited, Ottawa



Bailey Control Drive, Type AC44P Model 200. Only $210.00 F.O.B. Cleveland, complete with enclosure, positioning relay and hand operator.

Want Better Flow Characteristics from Your Regulating Devices?

This new, small, piston-operated Bailey Control Drive will improve the flow characteristics of butterfly valves, dampers, hydraulic couplings, feeders and similar regulating devices. Adjustment is simple; any desired relation between drive motion and pneumatic signal may be secured.

You can install this compact pneumatic drive power unit in any position on a column, pipe, or flat surface—and connect it to the regulating device with standard Bailey linkage, available from stock.

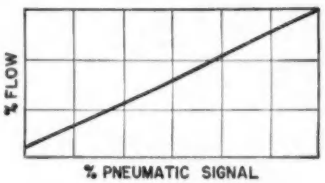
Speed (time required for full travel) is adjustable to suit your requirements. Bailey Control Drives operate on standard SAMA pneumatic signal ranges of 3 - 15 or 3 - 27 psig.

AVAILABLE FROM STOCK in 3 standard sizes

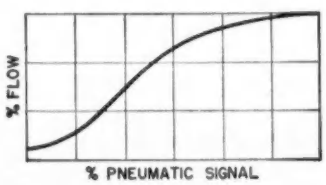
Type	Piston Dia. Inches	Piston Stroke Inches	Torque ft-lb	Max. Travel Degrees	Approx. Dimensions Inches
AC816	8	16	1500	90	13 x 27 x 51
AC68	6	8	400	90	13 x 19 x 34
AC44	4	4	75	75	10 x 11 x 19

P-28

The New Bailey Control Drive gives you THIS—



instead of THIS



BAILEY METER COMPANY

1056 IVANHOE ROAD

CLEVELAND 10, OHIO

Complete Controls for Process Plants

BAILEY METERS

Controls for

TEMPERATURE
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GAS ANALYSIS
FLOW LEVEL
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☐ I am interested in Bailey Control Drives. Mail me Spec. P81-1.

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HCOOH

Points the way to better quality in many products . . .

Heyden Formic Acid possesses a combination of properties which make it the preferred acid for many industrial applications:

- VOLATILITY—elimination of acid residues, which may damage materials being processed, is simplified by the volatility of formic acid.
- SOLUBILITY—readily soluble in water, alcohol and ether.
- HIGH PURITY—careful supervision and technical control produce an exceptionally pure, uniform acid in 85% and 90% concentrations.
- HIGH IONIZATION CONSTANT—2.14×10^{-4}—one of the strongest organic acids (approximately 12 times as strong as acetic acid). Permits efficient adjustment of pH over wide range.
- LOW MOLECULAR WEIGHT—46.03—smaller amounts of acid are required for neutralization, resulting in economies.

Heyden Formic Acid can be advantageously employed in the dyeing and finishing of textiles, the tanning and dyeing of leathers, for coagulating rubber, for organic syntheses, and as a raw material for the manufacture of drugs, odorants, fumigants, catalysts, plasticizers and water-proofing compounds.

Shipped in 525 lb. stainless steel drums and 125 lb. carboys.

•

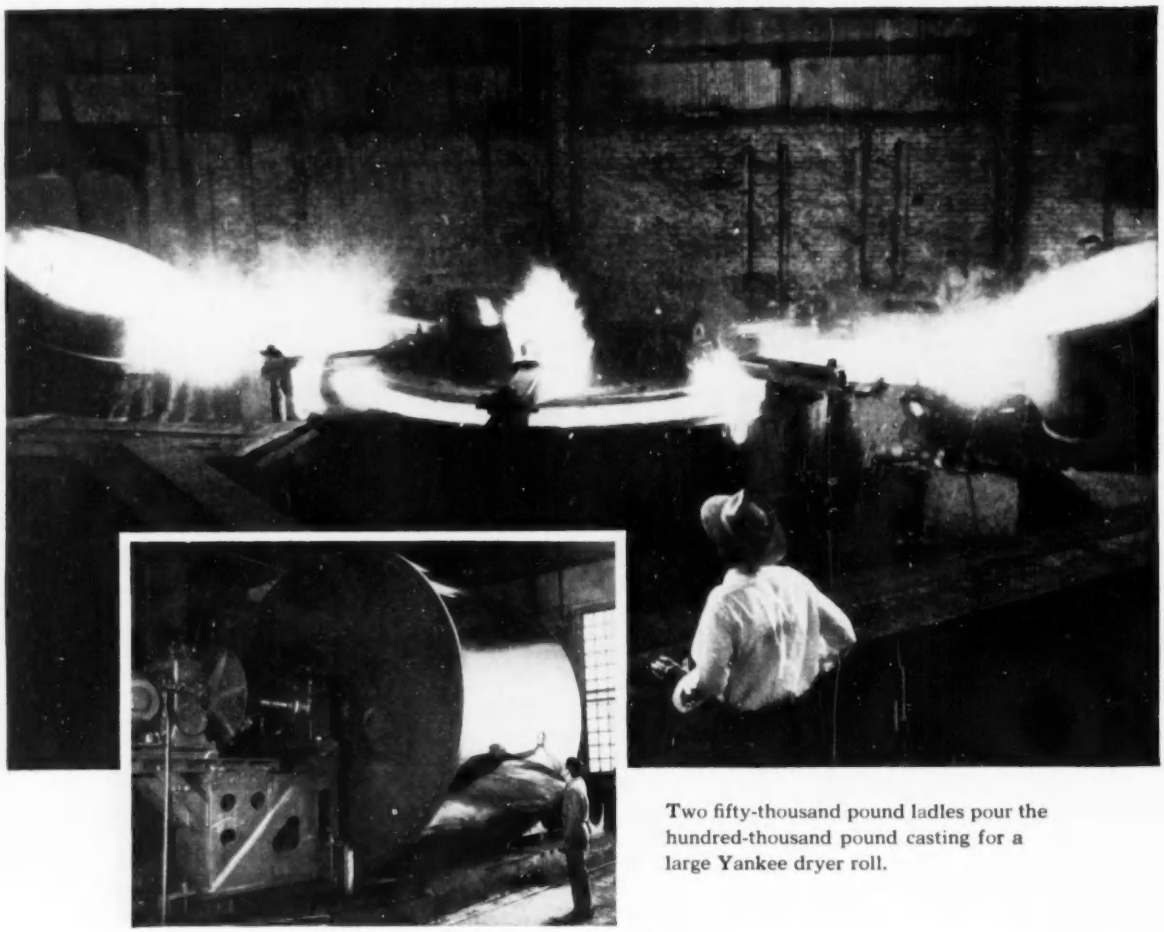
Heyden SODIUM FORMATE—a high quality, uniform product extensively used in tanning leather, making water-resistant wallpaper, and in dyeing and finishing of textiles. Shipped in 50 lb. multiwall paper bags.

•

Have you received your copy of our technical bulletin on Formic Acid? If not, send for it today.

HEYDEN CHEMICAL CORPORATION

FINE HEYDEN CHEMICALS



Two fifty-thousand pound ladles pour the hundred-thousand pound casting for a large Yankee dryer roll.

Where

Yankee Dryer Rolls...and paper quality... get started right

Here in this foundry is where many a paper mill's *quality control* begins.

Here is where strength is born to provide steam-tight dryer rolls. And here, too, the fine grain of the metal is assured. That is important, as you know, since the finer the grain the higher the polish.

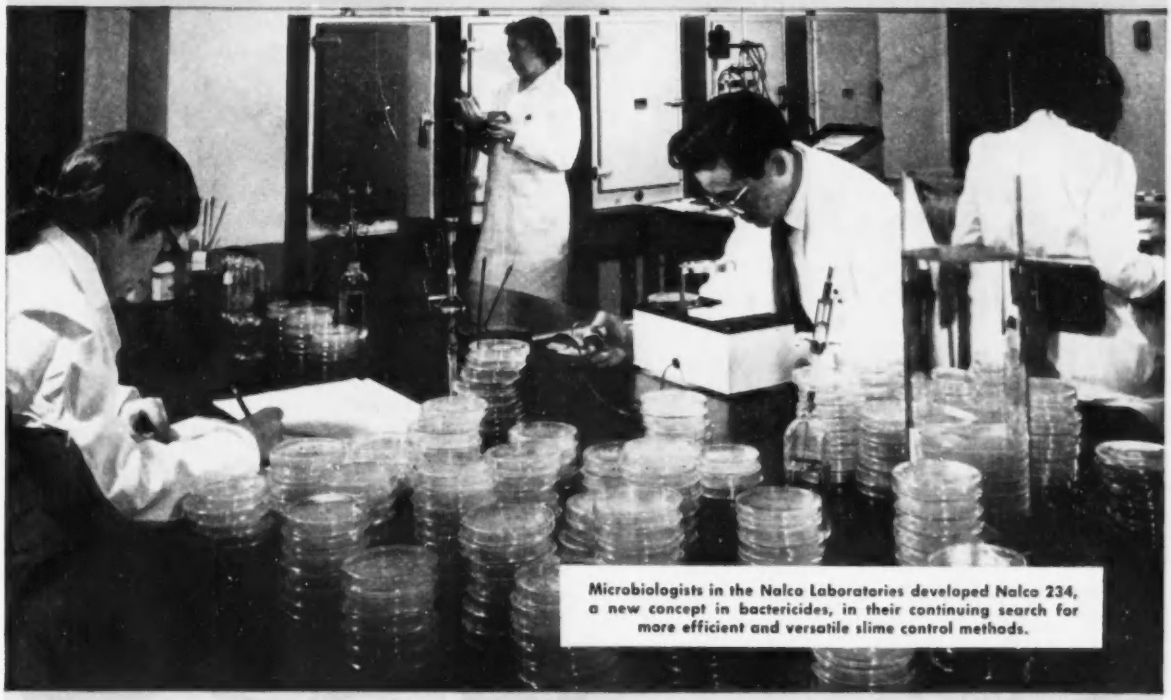
As you see from the small illustration, the Newport News Yankee dryer roll takes a mirror-like finish.

Newport News has equipment for casting and machining paper mill rolls up to 12 ft. in diameter, and to 320 inches in length. Output is numbered in the hundreds. And deliveries are prompt. Your inquiries are invited.

NEWPORT NEWS
Shipbuilding and
Dry Dock Company
Newport News, Virginia

An Entirely New CHEMICAL

NON-MERCURIC • NON-PHENOLIC



Microbiologists in the Nalco Laboratories developed Nalco 234, a new concept in bactericides, in their continuing search for more efficient and versatile slime control methods.

Fast Action SLIME CONTROL

with *Nalco* 234

NALCO 234 is a new organic liquid formulation, developed and proved to meet an industry-wide need for a *quick-killing, non-odorous* bactericide for maintaining clean systems in all types of papermaking—including food packaging and sanitary papers.

Combining the advantages of excellent slime control with powerful dispersing action on fibrous and gelatinous masses in machine systems, Nalco 234 reduces breaks on machines, decreases total down time, and helps produce a more uniform sheet.

Write Nalco, or call your Nalco Representative for full data on fast-action Nalco 234.

NATIONAL ALUMINATE CORPORATION

6221 West 66th Place • Chicago 38, Illinois

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THE ® SYSTEM

Serving the Paper Industry through Practical Applied Science

Calgon* Leads

in coating formulas

for COATED PAPERS, COATED BOXBOARDS

The superior deflocculating properties of Calgon and the high level of technical assistance available from Calgon Technical Service are the reasons why ***2 out of 3 of the nation's leading producers of coated papers choose Calgon for their coating formulas.***

These paper makers have learned that they can depend on Calgon for consistently high quality and for optimum efficiency. Calgon leads in coating formulas because it provides . . .

BETTER PIGMENT DISPERSION. Calgon's efficiency as a dispersive for clay, titanium dioxide, precipitated calcium carbonate and other pigments results in better finished coated stock.

BETTER COATING COLORS. Improved flow properties and higher concentration of solids account for the better coating colors that result when Calgon is used.

BETTER SURFACE COATINGS. Calgon in the formula greatly improves the bond between the coating and the paper stock and yields a smoother, more even surface.

Calgon has many other uses in the paper industry. If you have a special problem, take advantage of the wide experience which is available to you through Calgon Technical Service. For a more comprehensive analysis of the uses of Calgon, write for free copy of "Calgon and its Applications in the Pulp and Paper Industry."

*Calgon is the registered trade mark of Calgon, Inc. for its sodium phosphate glass (sodium hexametaphosphate) products.

CALGON inc.
A SUBSIDIARY OF HAGAN CORPORATION
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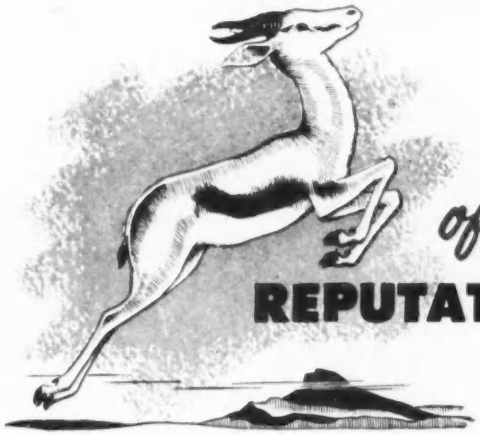
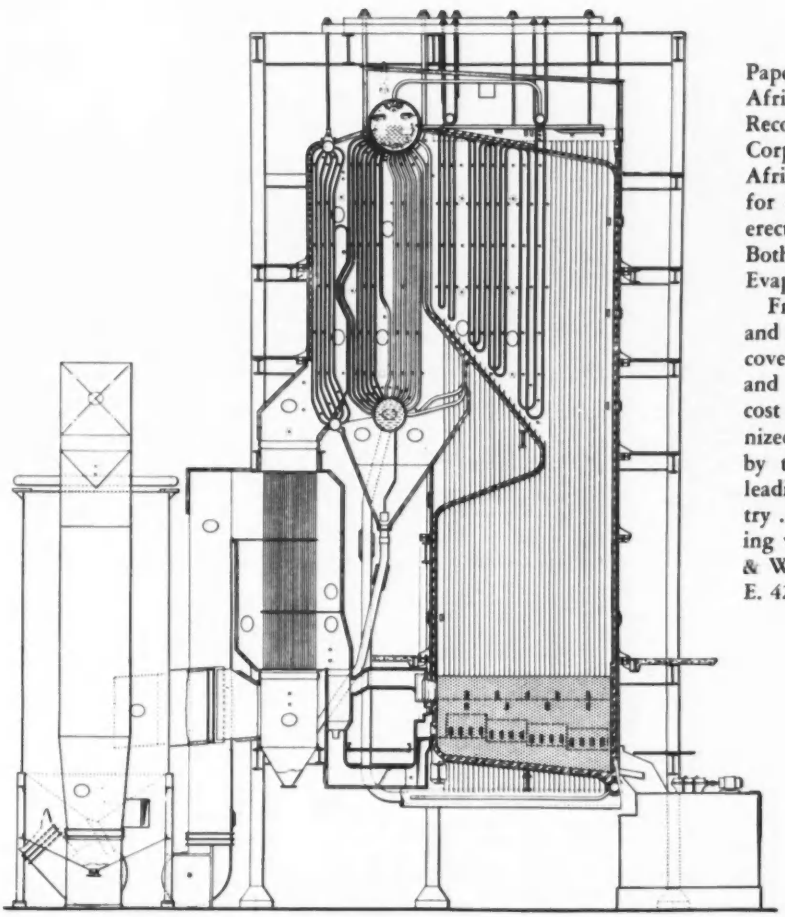


The SPRINGBOK, national emblem of South Africa.

# of B&W Recovery Units REPUTATION GOES A LONG WAY ...to South Africa



200-Ton B&W Recovery Unit with B&W Cyclone Evaporator for Outdoor Installation in Zululand.

Paper Industries, Ltd. of Springs, South Africa, have been operating a 75-ton B&W Recovery Unit for several years. Union Corporation, Ltd. of Zululand, South Africa, have ordered a 200-ton B&W Unit for outdoor installation; it is now being erected. This represents a repeat order. Both units will have B&W Cyclone Evaporators.

From Oregon to Florida, to Zululand and Finland, the reputation of B&W Recovery Units for highly efficient chemical and heat recovery, reliability, and low-cost operation and maintenance, is recognized. It is a reputation firmly established by the performance of B&W Units in leading mills throughout the paper industry . . . a reputation that is rapidly reaching world-wide proportions. The Babcock & Wilcox Company, Boiler Division, 161 E. 42nd Street, New York 17, N. Y.

BABCOCK & WILCOX

P-771

Meet Huyck's Braintrust

Meet the Huyck Research and Development Department — the largest in the felt industry.

This staff of 33 technicians, working in our plant and in a completely equipped laboratory, is the finest research team in the industry today.

This department's only function is to investigate your current felt problems and develop new techniques of felt manufacture for more efficient papermaking.

The forward-looking Huyck Research and Development Department is always *at your service.*

Consider service carefully when you buy felts: it must be always complete and dependable. As the Huyck service record proves, Huyck felts — with Huyck service — mean better production and lower costs for you.

KENWOOD TEXTILE PRODUCTS

HUYCK FELTS

first in quality . . . first in service

F. C. HUYCK & SONS

Established 1870 · Rensselaer, N.Y.

"You see Powell Valves everywhere! And with . . .

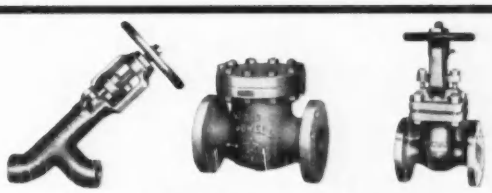
. . . good reason! They're famous for dependability. Economical, too.
What's more, Powell has a complete line."

Famous for dependability

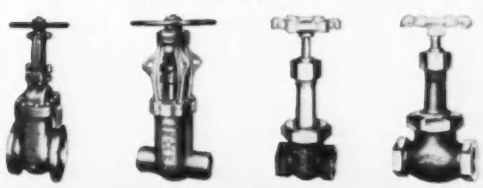
SINCE 1846

Wherever flow requires dependable control, there's *the* place for Powell Valves. Powell probably makes more kinds of valves and has solved more valve problems than any other organization in the world.

Available through distributors in principal cities. Made ⅛" to 30" and for 125 pounds to 2500 pounds W.S.P. Bronze, iron, steel and corrosion-resistant metals and alloys. On problems, write direct to The Wm. Powell Company, Cincinnati 22, Ohio.



CONTROLS FOR THE LIFE LINES OF INDUSTRY



Powell Valves

108th year

✓ Check the qualities you want built into your Kraft Papers...

- ☐ Controlled Acidity
- ☐ Controlled Alkalinity
- ☐ Neutral pH
- ☐ Controlled Porosity
- ☐ Compactness
- ☐ Low M.F.
- ☐ High M.F.
- ☐ Supercalendered
- ☐ Embossed
- ☐ Creped
- ☐ Wet Strength
- ☐ Tensile
- ☐ Tear
- ☐ Fold
- ☐ Mullen

Because in our NIBROC KRAFT line of engineered papers we can give you any of them.

NIBROC KRAFT is paper that's made to meet any challenge—no matter how tough. Just one of many examples is neutral kraft we developed for ordnance wrap and other technical uses where controlled pH and high physical tests are important.

Check the list above—and let our Technical Service Division know what you want built into *your* kraft. Write Dept. KR-11, Boston.

BROWN QUALITY

COMPANY, Berlin, New Hampshire

CORPORATION, La Tuque, Quebec

General Sales Offices:

150 Causeway Street, Boston 14, Mass.

Dominion Square Building, Montreal, Quebec

SOLKA AND CELLATE PULPS • SOLKA-FLOC • NIBROC PAPERS • NIBROC TOWELS • NIBROC KOWTOWLS NIBROC TOILET TISSUE • BERMICO SEWER PIPE AND CONDUIT • ONCO INSOLES • CHEMICALS

Bleach your pulp for brighter paper

with DU PONT PEROXIDE BLEACHING PROCESSES . . .

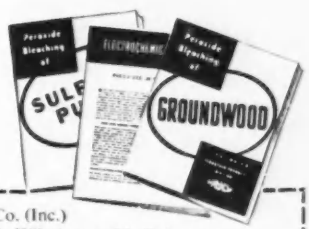
No other process gives you such high stable brightness levels—*increases of 10-14 G.E. units where needed!* Yet, Du Pont's Peroxide Bleaching Process preserves all the desirable features of groundwood, including high opacity, good formation and excellent printing properties.

SEND FOR OUR NEW BULLETIN P62-1054, "High-Brightness Bleaching of Groundwood." It describes how you can increase your groundwood brightness for brighter, more profitable papers. Mail coupon below for your copy of this bulletin and descriptive booklet.

Meet today's demand for high-quality bleached pulp with the Du Pont Peroxide Process. You can bleach sulfate pulp to high, *stable* brightness values, retaining good strength characteristics.

Peroxide treatment improves brightness retention and color stability of bleached pulp. In most cases the Du Pont process can be operated in existing equipment, with only a small investment for storing chemicals.

SEND FOR OUR DESCRIPTIVE BOOKLET on "Peroxide Bleaching of Sulfate Pulp." Mail coupon below.



DU PONT PEROXIDES are available for prompt delivery from conveniently located manufacturing plants. Du Pont's modern plants and facilities assure you a dependable supply of top-quality peroxide for your bleaching needs.

DU PONT
PEROXIDES

Albone® . . . . . Hydrogen Peroxide
Solozone® . . . . . Sodium Peroxide

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Dept. PT-11, Wilmington 98, Delaware

Please send me literature checked below:

- ☐ Bulletin P62-1054, "High-Brightness Bleaching of Groundwood"
- ☐ Booklet, "Peroxide Bleaching of Groundwood"
- ☐ Booklet, "Peroxide Bleaching of Sulfate Pulp"

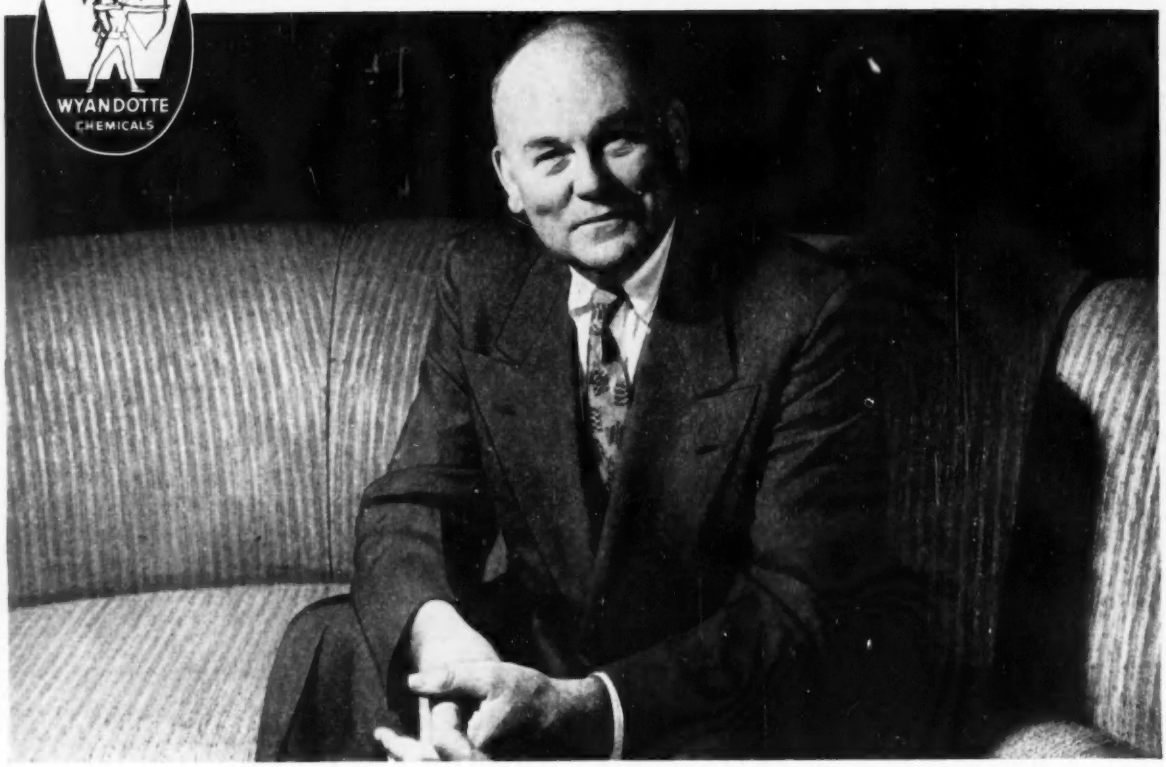
Name _____

Firm _____ *Position* _____

Address _____

City _____ *State* _____

Dependable Source for Chemical Raw Materials



James C. Wemyss is President of Groveton Papers Co., makers of Vanity Fair brand paper and tissue.

"It is important to us to choose efficient suppliers"

— says James C. Wemyss, Groveton Papers Co.

"We are going through an extensive program of expansion and modernization, in order to insure efficient operation in our own organization," states James C. Wemyss, President, Groveton Papers Co., Groveton, N.H.

"In all our long range planning, it is very important to us to choose suppliers who are efficient in their own right. This assures high quality, dependable service, and is conducive to our progress. In our new semi-chemical process, which makes for better paper products, we use considerable Wyandotte Soda Ash. We also buy Caustic and Chlorine from Wyandotte. We have found these products always uniform, delivery has been prompt, and technical help is always available to us when we require it.

"We feel that Wyandotte's new research facilities provide tangible evidence of their interest in growth industries, like ours."

How about *your* basic chemical raw materials? If you want a source with a 64-year reputation for reliability, service, uniform quality, and helpful technical assistance, write to Wyandotte. *Wyandotte Chemicals Corporation, Wyandotte, Mich. Offices in principal cities.*

Wyandotte
CHEMICALS

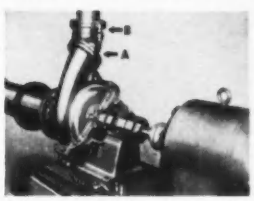
HEADQUARTERS FOR ALKALIES

Soda Ash • Caustic Soda • Bicarbonate of Soda • Chlorine
Calcium Carbonate • Calcium Chloride • Glycols • Synthetic Detergents • Agricultural Insecticides • Soil Conditioners
Other Organic and Inorganic Chemicals

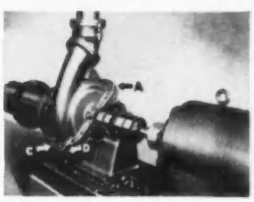
NEW Goulds Stock Pump

brings new maintenance economy

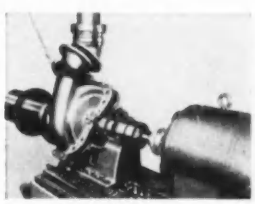
Follow through the simple operation of this newly-designed, hinged-cover casing, as shown in these pictures, and you'll see how completely it serves the requirement of better and faster maintenance.



1. You remove bolts connecting discharge elbow and pump casing (A). To get clearance and save gasket, you telescope the discharge elbow into discharge connection by a simple jacking arrangement (B).



2. Remove bolts connecting upper and lower halves of casing (A). Loosen top nuts (C) and raise upper half casing on hinge pin. Tightening hex nuts (D) raises casing off side-plate locks.



3. Attach chain falls and continue to raise casing. (On smaller sizes you can swing back the top casing half with a rod or pipe through the cored hole in casing web.)

4. With pump completely open, you remove bearing cap, disconnect coupling and lift rotating element out. And you've had to break no piping connections.

Bulletin 723.1 describes *all* the Fig. 3135 features that add up to advantages for you. Just write us, or use the coupon, and we'll send you a copy promptly.

Goulds PUMPS INC.
Seneca Falls
New York

ATLANTA • BOSTON • CHICAGO • HOUSTON • NEW YORK
PHILADELPHIA • PITTSBURGH • TULSA

In less than ten minutes one man alone can swing back the entire upper half of the new Goulds Fig. 3135 paper stock pump and check or remove the rotating element—*without disturbing pipe connections.*

Another new feature is the *centerline discharge.* The vertical centerlines of both suction and discharge are the same. This eliminates the need for right- and left-hand pumps, which saves on parts inventory. It also eliminates air binding and insures steady flow. If you need horizontal discharge, you merely rotate the discharge elbow at the top of the casing 180°.

You'll find other practical innovations in this new stock pump—innovations that mean your maintenance men can now easily do their inspecting and overhauling in much less than the time your machines are down for wire changes.

Fig. 3135 Features

Separate liquid end—available in bronze-fitted, all iron, all bronze and various stainless steel constructions.

Centerline discharge located at highest point in casing eliminates air binding.

Diagonally-split hinged casing gives quick access to rotating element, including bearing assembly.

Nonclogging impeller has special warped vane and heavy renewable side plates. Built for heavy duty.

Axial adjustment maintains proper clearance between impeller and suction side plate.

Rotating element same as in the Goulds Fig. 3105 stock pump, eliminating double inventory where both styles of pumps are in use.

Telescopic expansion joint in discharge connector makes for easy removal of upper half casing.

Available in 3″, 4″, 6″ and 8″ sizes with capacities to 5000 RPM; heads to 220 ft.

GOULDS PUMPS, INC. Dept. PT Seneca Falls, N. Y.

Please send me Bulletin 723.1 describing all the features of the new Fig. 3135 stock pump.

Name_____ Title_____

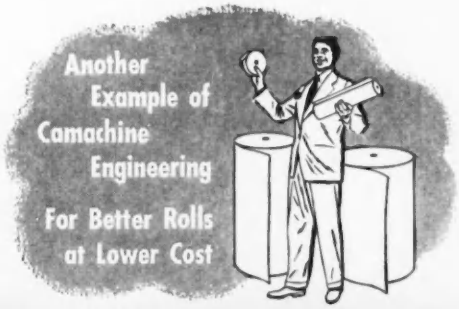
Company_____

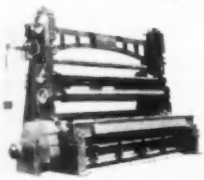
Address_____

City_____ Zone_____ State_____

Hydraulic RIDING ROLL LIFT

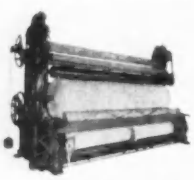
Smooth-acting, balanced control with no manual effort. Hydraulic cushioning prevents shock at the maximum upward-travel point of the piston and assures impact-free contact between riding roll and rewind shaft at the start of winding. Automatic operation reduces down-time between sets.





CAMACHINE TYPE 20

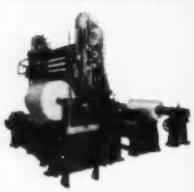
Widths to 310". Maximum rewind capacity may be either 42", 60" or 72" dia. Speeds up to 5,000 fpm* on paper and paperboard.



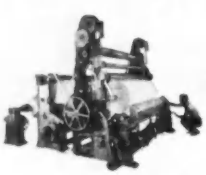
CAMACHINE TYPE 19

Widths to 192". Maximum rewind capacity may be either 42", 60" or 72" dia. Speeds up to 3,500 fpm* on paper and paperboard.

CAMACHINE TYPE 18

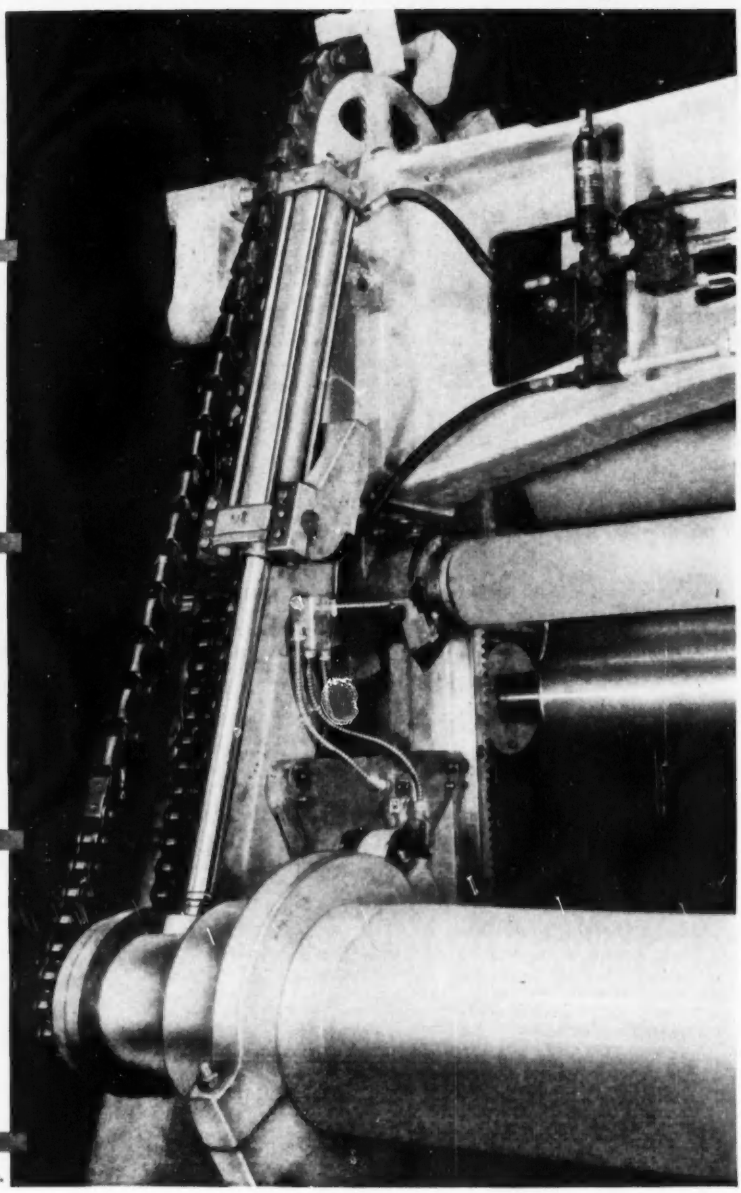


Widths to 150". Maximum rewind capacity may be either 42", 60" or 72" dia. Speeds up to 2,500 fpm* on paper and paperboard.



CAMACHINE TYPE 14

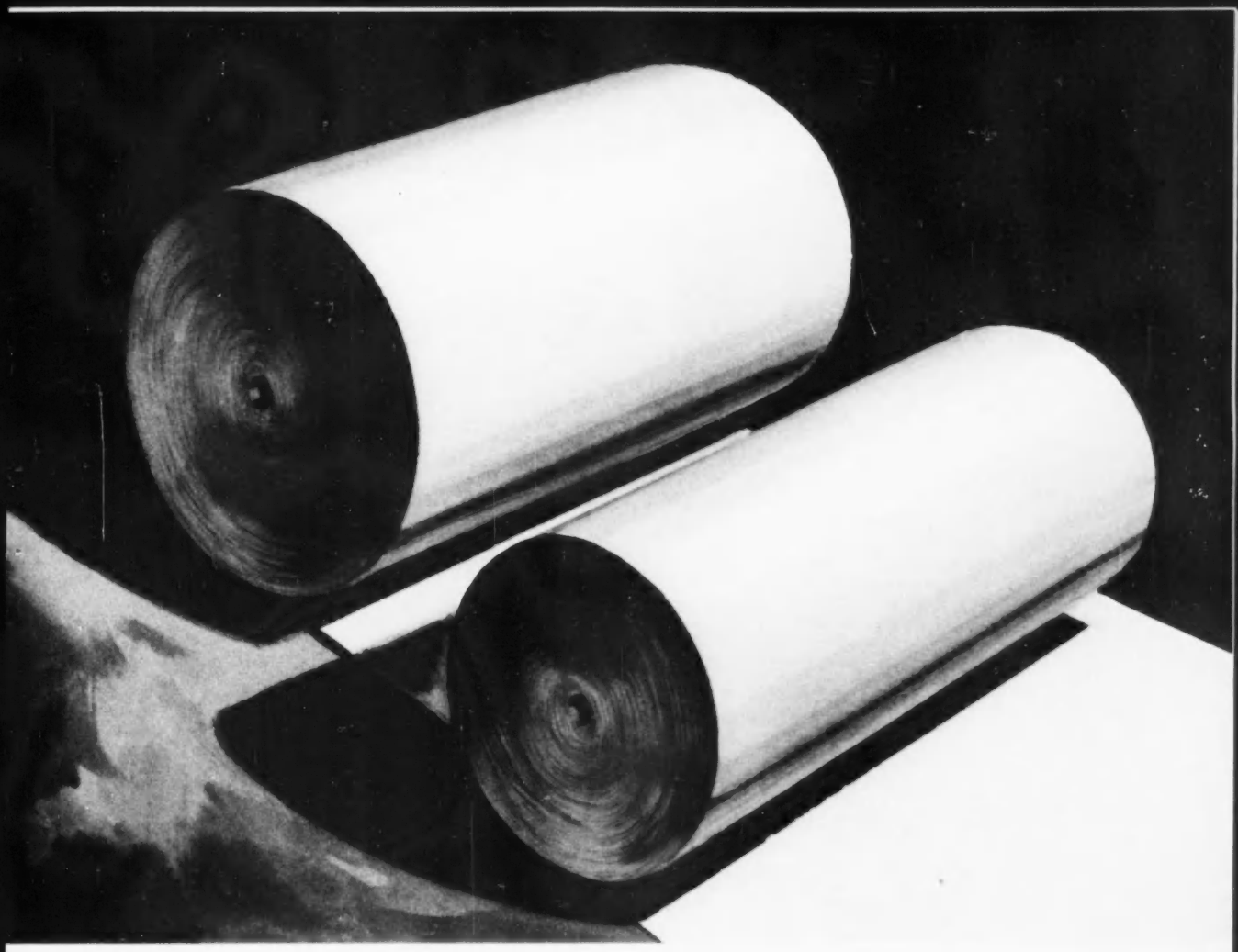
Widths to 92". Maximum rewind capacity may be either 38", 50" or 60" dia. Speeds up to 1,800 fpm* on paper and paperboard.



* Speeds depend upon characteristics of material and machine width.

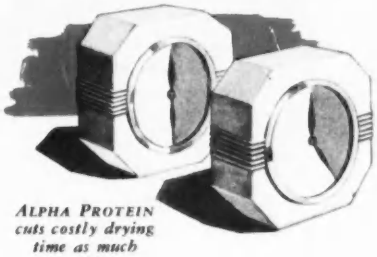
Don't wind up with less than a Camachine®

Cameron Machine Company • 61 Poplar Street • Brooklyn 1, N. Y.

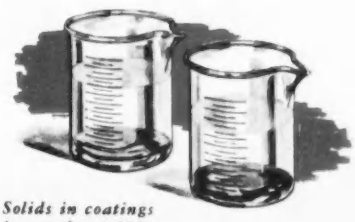


Production increased up to 15% with Alpha Protein®

...THE HIGH SOLIDS COATING ADHESIVE FOR OFFSET PAPERS



ALPHA PROTEIN cuts costly drying time as much as 15%.



Solids in coatings increased up to 12% by ALPHA PROTEIN

It's the extra solids in an Alpha Protein formulated adhesive which make possible production increases as much as 15%. More solids mean fastest drying, highest machine speeds. In addition, Alpha Protein improves printability, increases water resistance, gives greater uniformity and assures sharper reproduction. If you wish, the Glidden specialists in paper manufacturing will pilot test Alpha Protein to your requirements. This way they can make recommendations from laboratory and field experience long before you tie up any of your costly production equipment. Call Glidden for fast, competent service on all of your high solids coating needs.

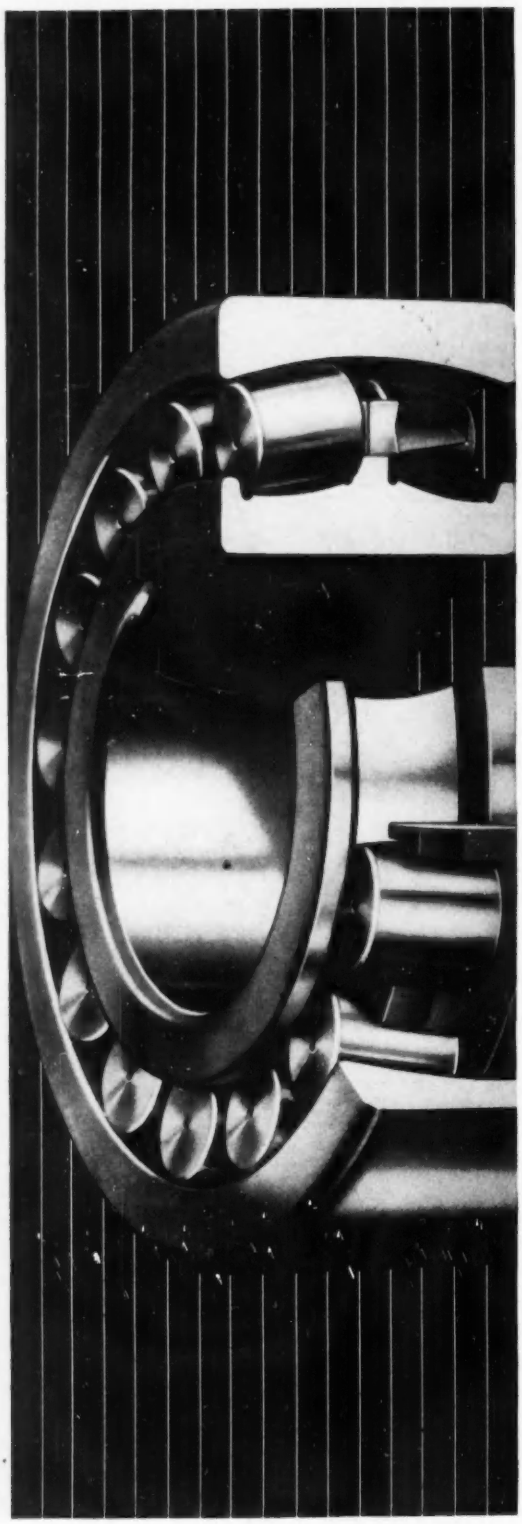
This advertisement is printed on paper processed with Glidden Alpha Protein. It is typical of the superior reproduction that can be obtained.

THE GLIDDEN COMPANY

QUALITY Glidden PRODUCTS

Chemurgy Division

1825 N. Laramie Street • Chicago 39, Illinois

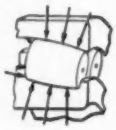


why it pays to specify

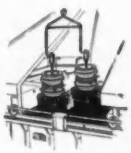
TORRINGTON

Spherical Roller Bearings

Uniform, close control of precision-ground contact surfaces—for even load distribution and maximum bearing life.



Accurate geometrical conformity between races and rollers—for ultimate load carrying capacity and performance.



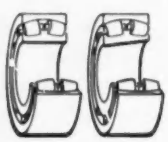
Races and rollers heat treated according to the most advanced metallurgical procedures—for maximum durability.

Individual one-piece cage for each path of rollers—assures freedom of operation.

Integral flange on inner race—to give radial stability and positioning for thrust loads—both essential to satisfactory performance.

Self-aligning—for continuous, free-rolling service under shock loads and at sustained speeds.

Unit assembly—for easy, economical handling.



Available from stock with either straight or tapered bore—for shaft or adapter mounting.

These are advantages that give you long, efficient, low-maintenance service in the toughest heavy-duty application. **To get maximum value for your bearing dollar, *specify TORRINGTON Spherical Roller Bearings.***

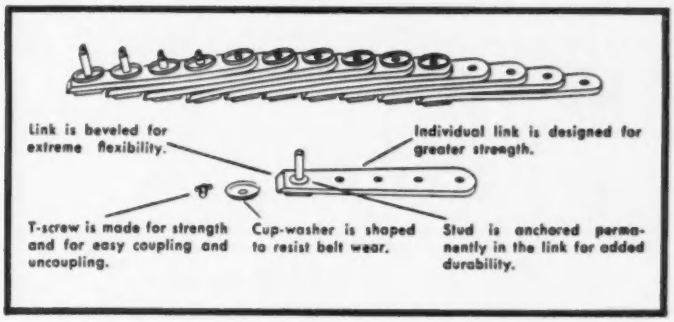
THE TORRINGTON COMPANY

South Bend 21, Ind. • Torrington, Conn.

TORRINGTON SPHERICAL ROLLER **BEARINGS**

Spherical Roller • Tapered Roller • Cylindrical Roller • Needle • Ball • Needle Rollers

This detailed line drawing of the new Veelos TD and TE v-belt makes it easy to see how this new v-belt is designed to do a better job... easier!


Link is beveled for extreme flexibility.
Individual link is designed for greater strength.
T-screw is made for strength and for easy coupling and uncoupling.
Cup-washer is shaped to resist belt wear.
Stud is anchored permanently in the link for added durability.

New VEELOS

TD and TE Adjustable V-Belt for D and E drives

▶ *easy* to couple and install

▶ *does a better job for a longer time*

THE NEW VEELOS TD AND TE adjustable v-belt was developed *specifically* for D and E drives. It's not just an adaptation, it's an entirely new patented v-belt design!

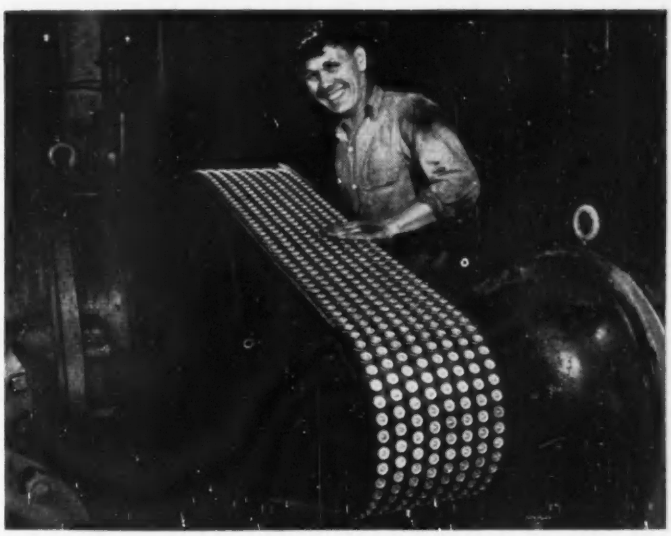
New Veelos TD and TE v-belt is faster and *easier* to install. Cup-washers and T-screws join links together to make up individual belts—and you don't need to remove outboard bearings.

New Veelos TD and TE v-belt lasts longer. Advanced construction of stud, cup-washer and T-screw provides added strength and durability—protects the new high-tensile strength link.

New Veelos TD and TE v-belt is perfectly balanced. Machine-cut sides and uniform links provide smooth, vibrationless, full-power delivery.

Put the new Veelos TD and TE v-belt on your D and E drives . . . prove to yourself that this v-belt does a better job for a longer time!

Get the complete story of this great, new v-belt. Send coupon for new 8-page illustrated bulletin.



MANHEIM MANUFACTURING & BELTING CO.
616 Manbel St., Manheim, Pa.

Please send copy of your new Veelos TD and TE v-belt catalog.

Name.....

Company.....

Address.....

.....

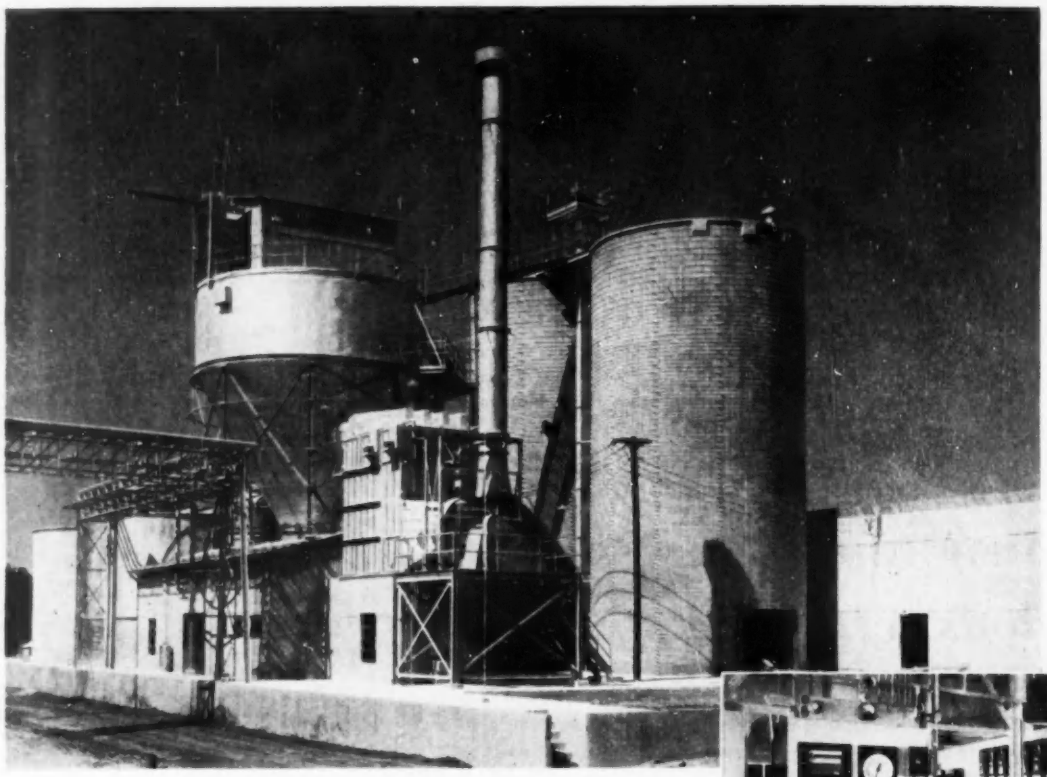
T2

VEELOS
THE LINK
V-BELT

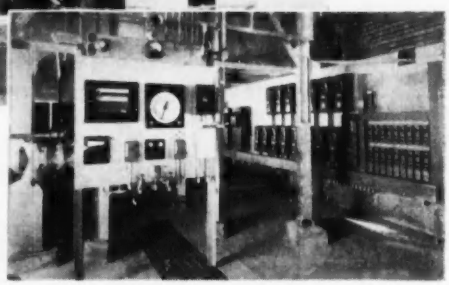
Veelos is known as Veelink outside the United States.

ADJUSTABLE TO ANY LENGTH

ADAPTABLE TO ANY DRIVE



• View of Thiele's new Spray Drying Plant.



• Modern instruments and controls for Spray Drying Plant.

Now **IN FULL OPERATION**

This latest addition to Thiele's modern facilities will provide such important benefits as —

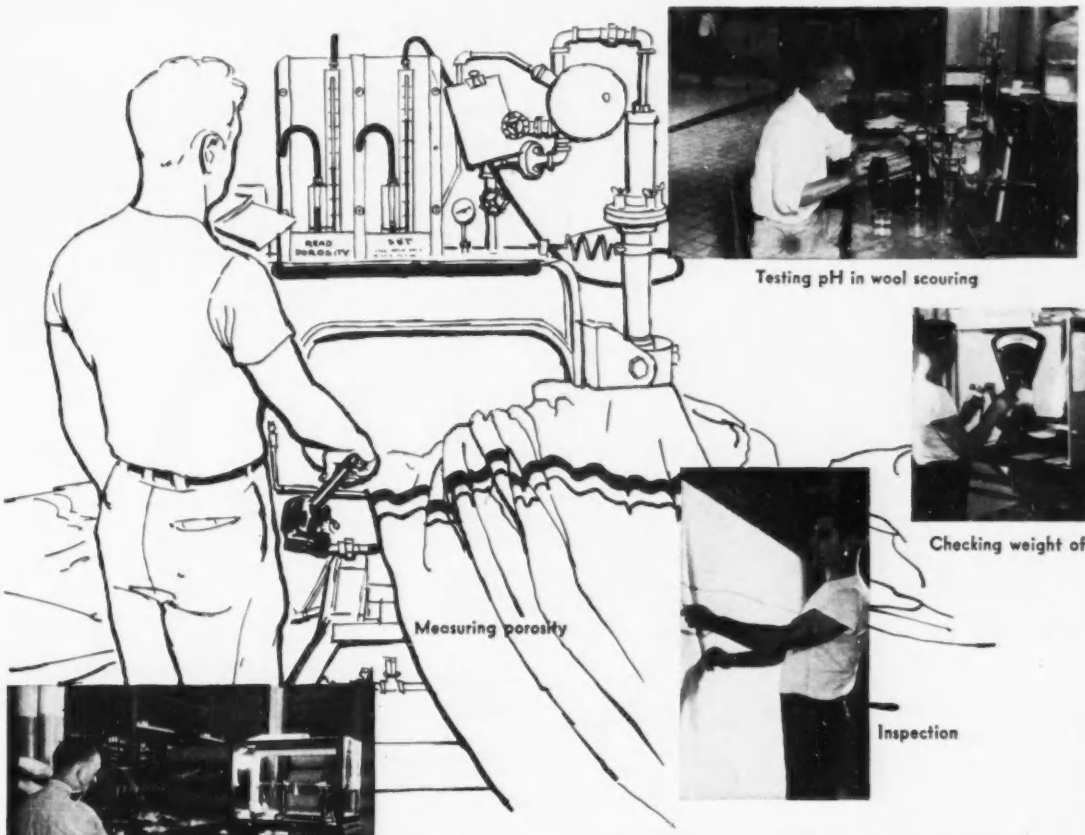
- ***Easier Make-down***
- ***Improved Handling***
- ***Lower Moisture Content***
- ***More Uniformity***

— all to help you make a better product.

THIELE KAOLIN COMPANY'S *New Spray Drying Plant*

Thiele Kaolin Company

P. O. BOX 270 • SANDERSVILLE, GA.



Testing pH in wool scouring

Checking weight of roving

Measuring porosity

Inspection

Testing spun yarn

paper is our business, too

Over 120 separate tests assure trouble-free felts

As part of our constant endeavor to produce better felts for better papermaking, Albany Felt Company maintains the most thorough and rigid quality controls. Throughout every manufacturing operation . . . sorting the raw wool, scouring, blending, carding, spinning, weaving and finishing . . . constant checks are made to assure top quality and uniformity. An Albany felt must pass more than 120 of these check points before it is ready for delivery . . . your assurance of the finest felts modern methods can produce!

Paper is our business, too, for every Albany felt is custom-designed and made to meet specific requirements of an individual machine for finish, drainage and trouble-free performance.

The result: ***MORE SALEABLE TONS PER DAY!***

FREE! Felt Performance Record Book for Mill Superintendents, Managers, Purchasing Agents. Write for your handsome leather binder containing convenient forms for maintaining records and graphs of felt performance, felt inventory, etc.

ALBANY FELT COMPANY

"World's largest Manufacturer of Paper Machine Felts"

MAIN OFFICE AND PLANT, ALBANY 1, NEW YORK

Other plants: Hoosick Falls, N. Y., North Monmouth, Maine, Cowansville, Quebec.

The Sign of Craftsmanship

You're going to see this trademark more and more.

You'll find it on Eastex pulp, board and paper—*new* products crafted by *new and improved* methods.

Using a revolutionary chlorine dioxide bleaching process Eastex market pulp achieves a combination of "high brightness" and strength not attainable by conventional methods.

An exclusive Eastex technique of blending short-fibered hardwood and long-fibered softwood to specification, gives board and paper customers a product tailored to their exact needs.

And finally, use of a remarkable new machine coating system provides Eastex customers the finest printing surface available in the industry.

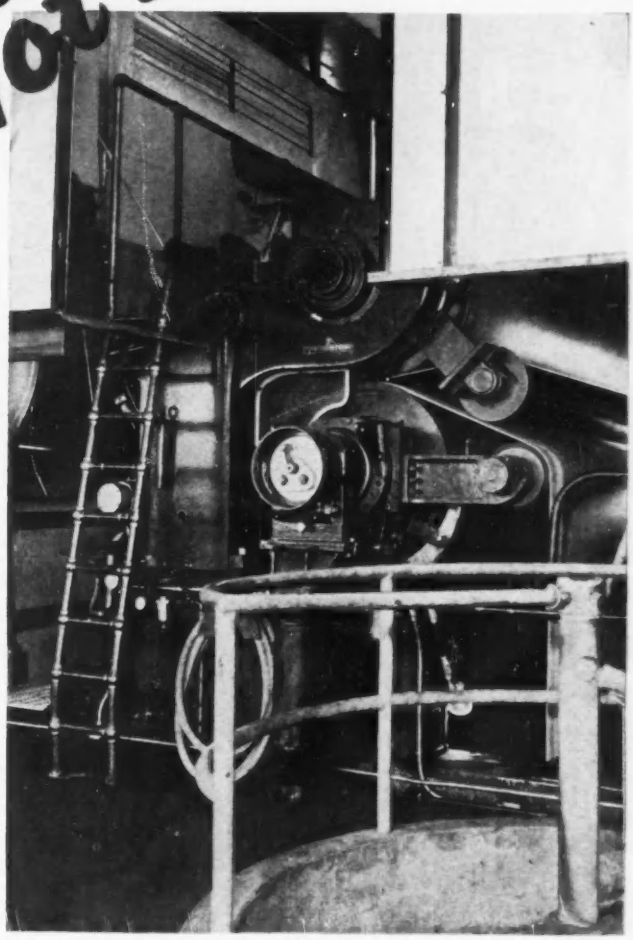
The Eastex seal assures you:

- pulp, board and paper of highest craftsmanship
- delivery on promised dates
- fair, consistent treatment to **all** customers **all** the time.

EAST TEXAS
PULP & PAPER CO. Evadale, Texas

Telephone Silsbee, Texas, Evergreen 53711
or
Eastern Sales Office, 122 East 42nd St., New York City

NEW Downingtown Suction Hot Press



Photograph of Downingtown Suction Hot Press recently installed in dryer section of #6 machine at Longview Fibre Co., Longview, Wash. This press tells the story.

Another Downingtown First—increases by 33⅓% dryness of an already well pressed, test liner sheet.

Before installation of Downingtown Suction Hot Press—sheet entered dryers at 815 FPM and 31% dry after an efficient suction couch and two suction presses.

After installation of Downingtown Suction Hot Press—(so called because of location in dryer section) sheet entered main dryer section 41% dry. Consequently speed increases are permitted.

This unbelievable increase in dryness is due to a combination of features, including engineered felt and paper runs, suction box size, roll diameters, use of predryers and nip pressure of 500# lin. in.

Contingent advantages include reduced refining horsepower, higher Mullen test.

Learn the entire story about the Downingtown Suction Hot Press from your Downingtown Sales Engineer. Write, wire or call.

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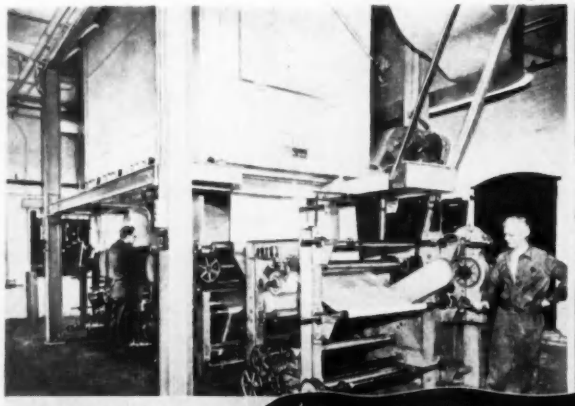
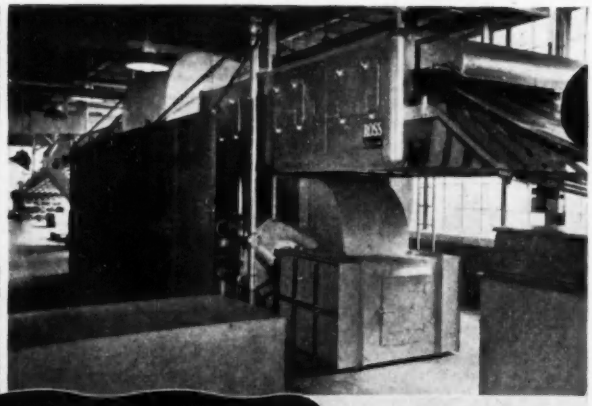


Tower Type Dryer handling Fibreglas cloth coated with silicones.



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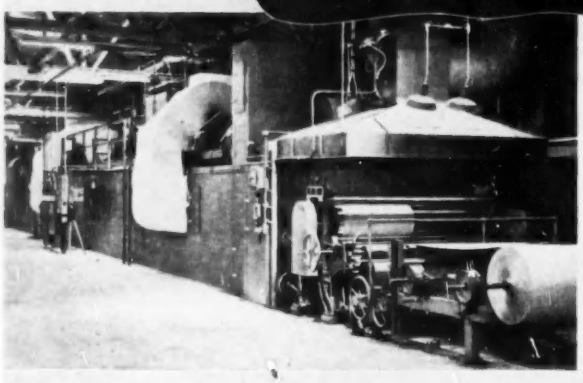
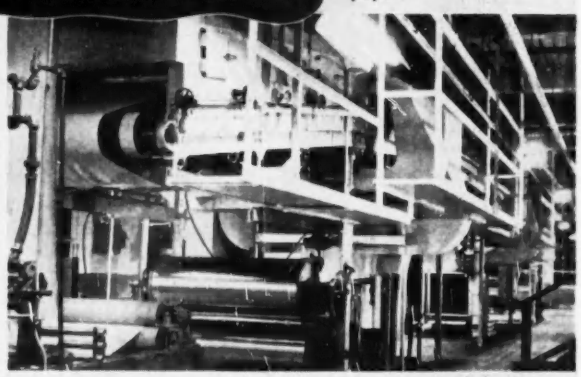
Exterior view of Tower Treater for handling solvent coated paper.

Huge multi-pass dryer used in processing sensitized paper.



Treater Drying Unit with 2 heating zones and cooling section.



Drying and Fusing Unit for organosols and plastisols.

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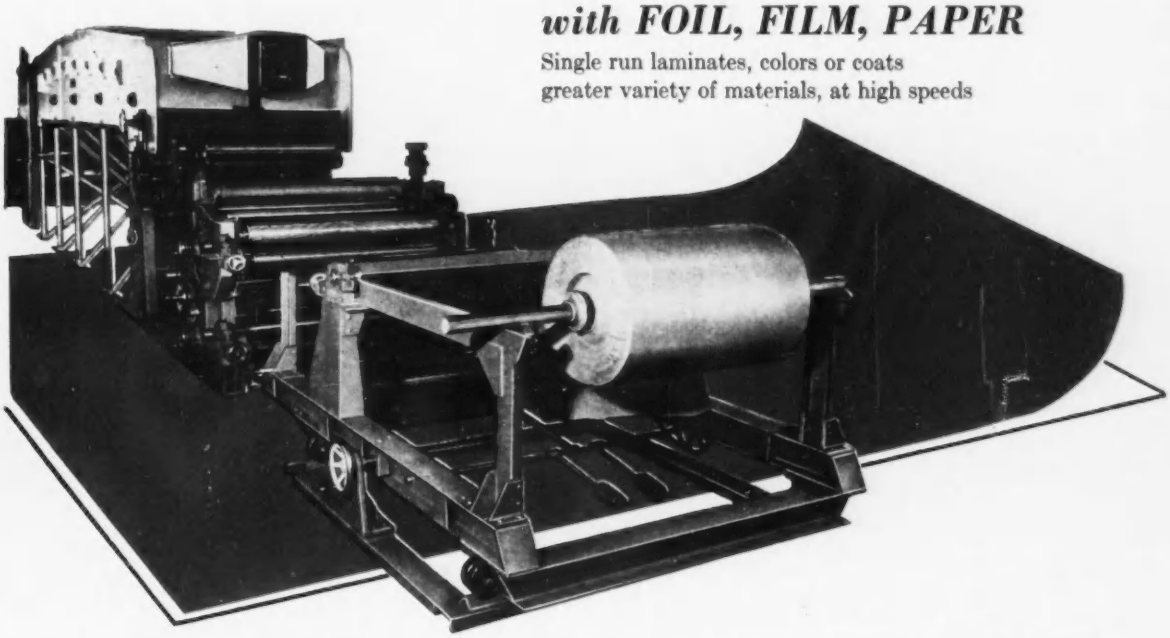

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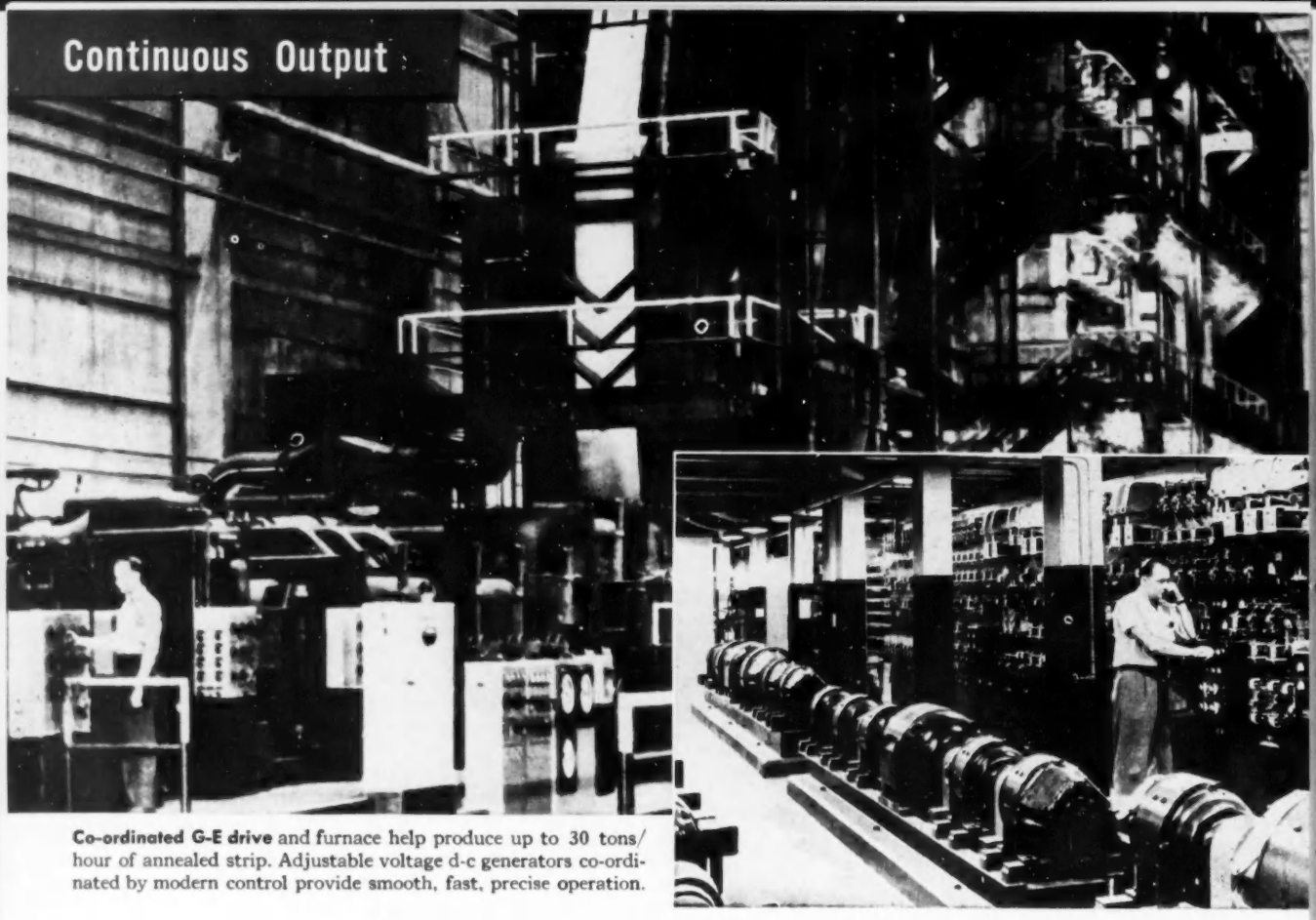

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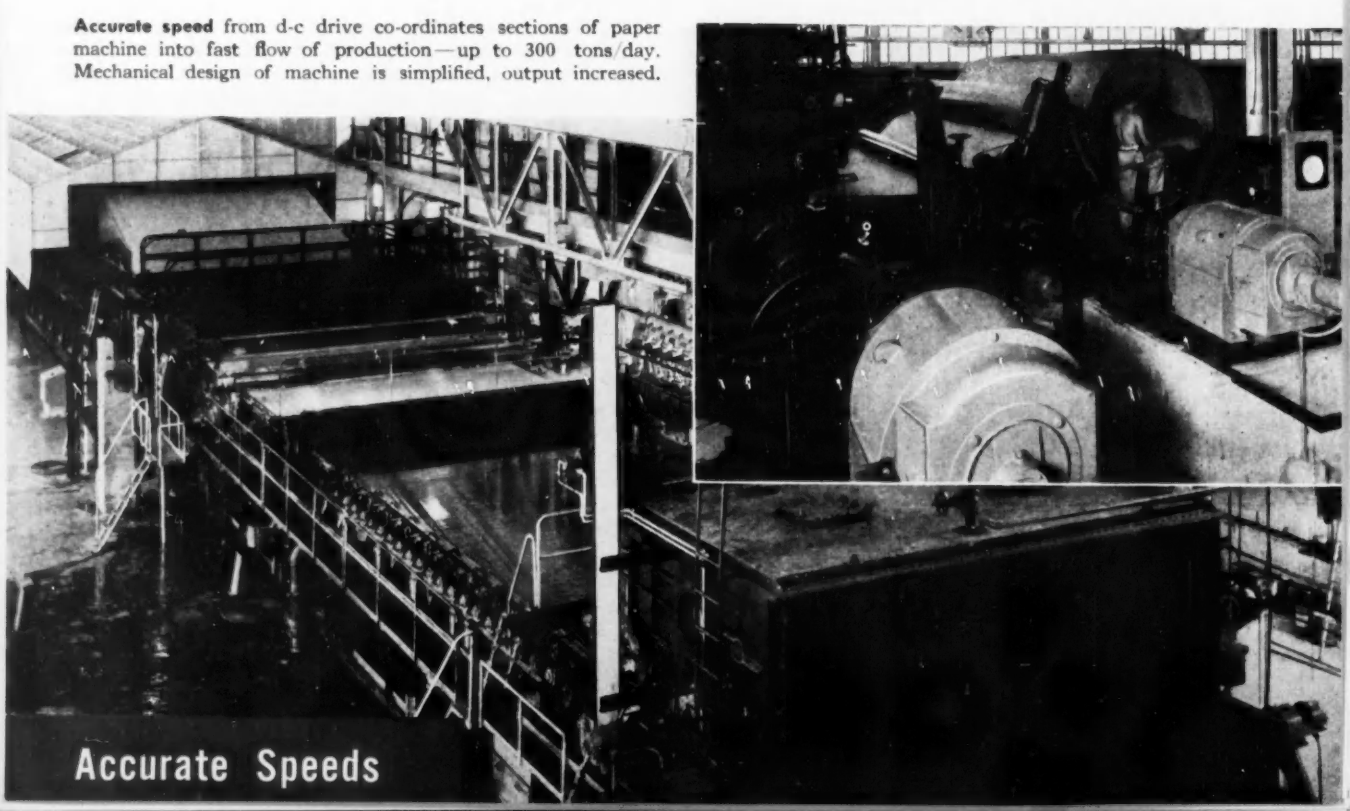
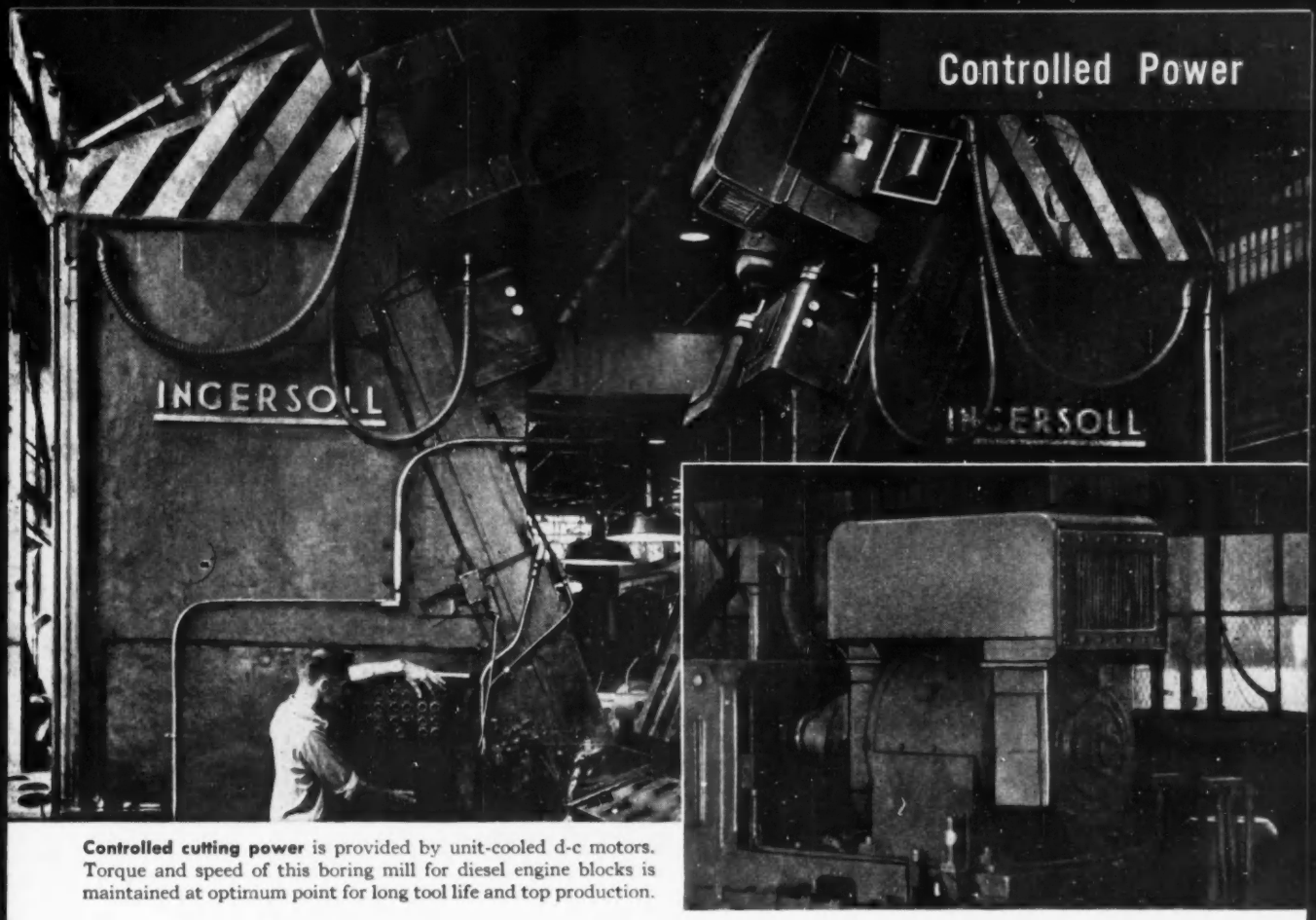


Accurate Speeds



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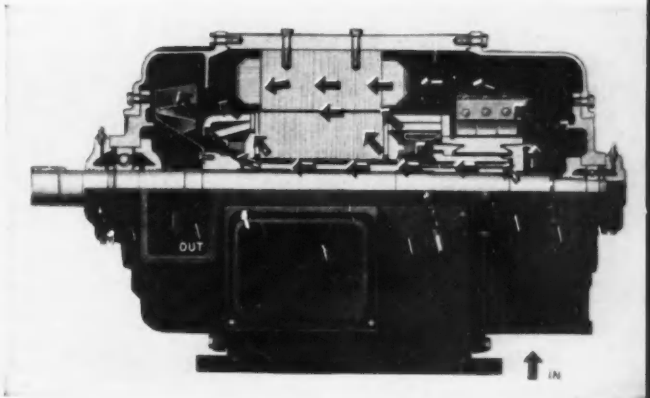
FOR MORE INFORMATION, contact your nearest Apparatus Sales representative, or write for bulletin GEA-5497, general-purpose d-c motors, or GEA-6091A, totally-enclosed unit-cooled d-c motors. Section 810-4, General Electric Co., Schenectady, N. Y.



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If you haven't a copy of our Bulletin F-52, write in now for your copy. It tells how successful paper-makers in all parts of the country are employing Dicalite paper-aids to speed up production, improve products and cut costs. Some of their methods might be put to work in your own plant.

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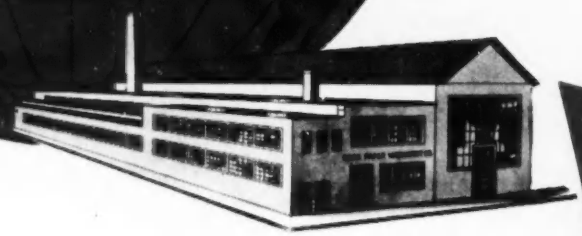

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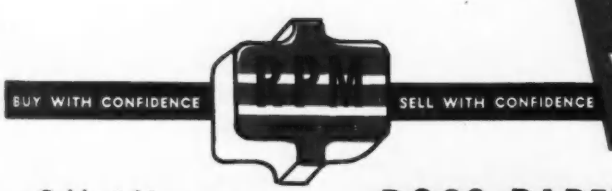

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PAPER TRADE JOURNAL

TRENDS

Industry Comes Abreast Of Last Year's Production

In a spurt of activity during October's final week, output of paper and paperboard industries rocketed to year-ago levels and thus set the year's peak.

For paper mills, the American Paper & Pulp Assn. reported output of 96.8 percent of rated capacity for the week of October 30, compared with 96.8 in the 1953 week and with 94.5 (revised) in the earlier week.

Paperboard industry activity at 96 percent for the week was also neck-to-neck with the October 31 percentage of last year, and compared with 93 percent in the previous week. Because of new capacity, the tonnage output was 3,000 tons greater than in the 1953 week.

Incoming orders were some 30,000 tons more than in the October 31, 1953 week. Boxboard orders for holiday merchandise and container boards for the reviving automotive factories are factors in the improvement. And confidence runs high that a combined push from these sources during November will roll up further gains for the industry's bellwether.

Industrial Output Rises Moderately, Says D&B

A moderate rise in industrial production was reported by Dun and Bradstreet for the week ended Wednesday, November 3. Steel and automobile output gained, and heavy construction boomed. Though total industrial output was but 2 percent below the year-ago week, the small yearly difference is seen by D&B as due more to declining output a year ago than to currently improved production.

Commenting on the stock market gains which followed last week's election, the weekly trade letter holds these "biggest stock market gains of 15 years" as an indication of business optimism. Extensive new construction of hospitals, schools, bridges, and highways will be undertaken in the coming months as the result of public support for new bond issues in many parts of the country, in the opinion of Dun & Bradstreet's markets analyst.

More than 93,000 passenger cars and trucks were produced in the week ended October 30, and the largest monthly output in automobile history is expected this month. Cadillac Motors announced a backlog of 90,000 unfilled orders.

National City Bank Notes Strengthened Confidence

Further evidence of general business pickup and strengthened confidence during October was noted by National City Bank's November letter. Production rose a little and industrial buying was more active.

More than purely seasonal influences are seen in this improvement. Chief support is probably the reduction of inventories to the point where new commitments have to be made, says National City's writer.

Looking ahead to the years end, a rise in industrial production index (seasonally adjusted) is confidently predicted, if only because November and December will be months of heavy automobile output. With model changes now completed, operations are expected to rise steadily. November output will more than double October output of 232,900 units. December schedules call for assembly of 615,000 cars which, if realized, will be the biggest month's production in over four years.

This activity will give strong support to employment and trade, says the Bank's *Monthly Letter*, and if the interest shown in the new cars be an indication, a period of active sales as well as increased output is ahead.

Noted also by the bank letter is that durable goods orders have been picking up in other lines. The Defense Department placed nearly $5 billion in contracts in the four months ended October 31, nearly triple procurement in the same period last year. Machine-tool manufacturers and farm machinery firms, whose orders have been in a long decline, share in the improvement.

October Paperstock Purchases Sets Years Record At Eastern Mills

In both purchases and consumption, October 1954 was the third highest on record for the eastern group of consuming mills. October weekly averages of *news* grades were highest of the year, with the container grades second, according to the Eastern Conservation Committee. For the high grades, purchases exceeded any preceding month this year; in consumption, they rank fourth.

Mixed grades dropped to fifth place in consumption because, says Director C. S. Baker, the boxboard mills have been demanding better grades of paperstock when high-quality mixed paper cannot be obtained.

Price Is the Factor. In the opinion of a leading figure in the waste paper industry, low price is the answer to any such supply inadequacy.

"There is no question of doubt that anyone in his right mind would pack #1 Mixed Paper as a grade, "said Anthony Gaccione, president of Toga Paper Stock Co. Inc., in a letter to the editor. A director of the Waste Paper Institute, Mr. Gaccione stated that "when the price for this grade reaches the profit-bearing level, then it will be established as one of the principal grades of waste paper. #1 Mixed Paper really is sold and shipped now as a by-product and not as a regular grade".

Few Changes In Waste Paper Prices

As a whole, the waste paper market developed few changes in price during November's first week.

In New York, prices are strong for most grades, particularly for manila tab cards.

In Chicago, a $5 lift was reported by leading mills for hard white shavings, with the month's range $100/105. Repacked books are $2.50 higher at $27.50, though other mills kept the $25 October level.

The sole reported change in the Boston market is a $5 drop in the double-kraft lined cuts at the low of the range, to make the current price level $37.50/47.50 f.o.b. trucks shipping point. The lower price covers a small tonnage. Chemfiber lined cuts are still priced at $47.50.

Except for notable strength in several high grades, the west coast market shows no real change from October levels. (See *PRICES* page.)

Active Export Demand Strengthens Gum Rosin Prices

Gradually rising prices are looked for in naval stores products during the remaining months of the year.

Strength in the gum rosin market is said to reflect lower stocks in producing countries abroad, particularly at a time when rosin requirements overseas are increasing in line with industrial activity.

The supply of all types of rosin during the current crop year is estimated at about 2 percent above last year, with the output 100,000 drums more than 1953's season but the carryover some 34,000 drums less.

Domestic trading last week increased in a firm-to-strong market. Export however amounted to 56 percent of over-all reported sales.

—E.P.N.

Paperboard Production (Tons)*

	Oct. 30 1954	Oct. 23 1954	Oct. 31 1953
Production	260,468	258,055	257,169
New Orders	256,771	225,539	227,040
Unfilled Orders	390,454	394,122	423,728
% of Activity	96	93	96

* Source: National Paperboard Assn.

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WEEK OF PAPER TRADE JOURNAL NOVEMBER 12, 1954

Rayonier to Acquire Majority Interest In Alaska Pine & Cellulose Ltd.

Abitibi Power & Paper Co., Ltd., Toronto, and the Koerner interests of Vancouver, B. C., expect to sell to Rayonier, Inc. a majority of their holdings in the common stock of Alaska Pine & Cellulose, Ltd., of Vancouver.

D. W. Ambridge, president of Abitibi, said a total of 80,000 shares of Alaska Pine & Cellulose stocks is involved, valued at approximately $20 million.

Both Abitibi and the Koerner interests will retain a substantial stock interest in Alaska Pine, and Mr. Ambridge and Walter C. Koerner will continue as directors of the company.

Mr. Ambridge said he believed the new relationship will result in broader and more intensive research looking toward better wood utilization and improvements in quality. Clyde B. Morgan, president of Rayonier, said no changes in the operating management of Alaska Pine & Cellulose are contemplated.

Mr. Ambridge said it is planned that Abitibi's share of the proceeds from the sale would be used to redeem its convertible debentures.

Alaska Pine & Cellulose operates two dissolving and paper pulp mills in British Columbia, one at Port Alice and the other at Woodfibre. The mills have a combined daily productive capacity of 430 tons.

The present company was only formed in May 1951 when Abitibi and the Koerner interests acquired the stock of British Columbia Pulp & Paper Co.

Alaska Pine & Cellulose has 100,000 shares of common stock outstanding. Mr. Ambridge's statement therefore indicates that Rayonier will have an approximately 80 percent interest in the company.

Woodfibre Mill

Port Alice Mill

Dexter Sulphite Settles Tax; May Be Sold

In a compromise settlement, the village of Dexter, N. Y., has received a total of $31,575.59 in taxes and penalties on the Dexter Sulphite Pulp & Paper Co.'s property for the years 1953 and 1954.

The company ceased all pulp production in June 1953. At the time of closing the mill, Kenneth C. Irving, president of the pulp company, was said to attribute the shut-down to high cost of pulpwood and the resulting inability of the mill to compete with Scandinavian pulp prices. The owners have been unable to resume operations, and they have been considering various offers to purchase the business.

The village board of Dexter agreed, for purposes of the present tax settlement, that the assessment for 1953 on all Sulphite's property be set at $419,292. This represents $374,792 on the mill, $29,700 on the housing units, $10,000 on the Dexter and Northern Railroad and $4,800 special franchise on the railroad. The assessed value for 1953 as originally set in November, 1952, of $839,185 was protested by the Sulphite company and a proceeding to review assessment has been pending trial since an order was entered in N. Y. State supreme court on January 5, 1953.

The tax on the reduced assessment at the 1953 tax rate of $2.50 per hundred amounts to $10,482.30 and penalties total an additional $1,310.29. The 1954 taxes amounting to $18,575.59 and penalties of $1,207.41, which were also in arrears, are now being paid in full.

What is described as a New York City pulp manufacturing firm is considering the purchase of the idle Dexter Sulphite Pulp & Paper Company with plans to reactivate the mill, it was reliably learned. The proposal is now in "the talking phase," though there are indications that negotiations may result in a definite decision soon.

New Palatka Machine Rated at 80 Tons

Following first news of Hudson Pulp and Paper Corp.'s $15 million expansion of the Palatka, Fla., mill (*Paper Trade* JOURNAL, October 22), it was learned that the new high-speed fourdrinier tissue paper machine will have an 80 ton per day capacity.

Contracts for the construction project, which will require about 20 months to complete, will be handled by J. E. Sirrine Co., Greenville, S. C. It will be the first fully integrated tissue product manufacturing operation in the south.

In addition to the paper machine, which will supplement the two paper machines now in operation at Palatka, the expansion program will include pulp dryers, three digesters, a bleaching plant, chemical recovery equipment, water treatment and filtration plants, turbines and other equipment to convert tissue to end products, all of which will be housed in several new buildings. Several truck-loading docks and railroad spurs also will be constructed. Anton M. Lund, vice-president in charge of manufacturing, will be responsible for construction of the new facilities.

The project will increase the company's annual tissue capacity by approximately 27,500 tons and also provide an additional 20,000 tons of bleached sulphate pulp for conversion into bleached kraft paper and other products.

W. R. Grace Expands Bagasse Paper Mill

A one-and-a-half million dollar project to provide a 50 percent increase in production at the Grace bagasse pulp and paper mill at Paramonga, Peru, has been started by W. R. Grace & Co.

The project includes the purchase and installation of a 110-inch, five-cylinder machine now being built by the Sandy Hill Iron and Brass Works. The machine will produce various grades of board, including coated stock. It will be placed in operation during 1955, and is engineered to run 300 feet per minute to produce initially 30 to 50 tons per 24 hours. It can be expanded, however, to produce as much as 80 tons a day to keep pace with projected market growth.

The Paramonga mill was the first in the world to produce paper from bagasse on a commercial scale.

Paper and Board Production

According to the American Paper and Pulp Association, the ratio of United States paper production to mill capacity for the week ending October 30, 1954, was 96.8 percent, compared with 94.5 percent revised, for the preceding week. The ratio was 96.8 percent for the corresponding week a year ago. Mills producing newspaper exclusively are not included.

The paperboard production ratio for the week ending October 30, 1954, was 96 percent, compared with 93 percent for the preceding week, and 96 percent for the corresponding week last year.

(Detailed statistics on page 137)

New Newsprint Mill Gets Publishers' Support

On the heels of *Paper Trade* JOURNAL'S report last week that the Dierks lumbering firm was about to approve plans for a pulp and paper mill, comes news that Fred Dierks, president of Dierks Forest, Inc., has received commitments from southern newspaper publishers to buy the output of a newsprint operation, if Dierks builds it.

Before the Southern Newspaper Publishers Assn. meeting in Boca Raton, Fla., Mr. Dierks has outlined a proposal to spend up to $12 million for a mill to turn out between 50,000 and 60,000 tons of newsprint annually. He made the proposal to a joint meeting of the S.N.P.A. newsprint mills committee, headed by Charles P. Manship, Jr., publisher of "The Baton Rouge (La.) State Times and Advocate," and the newsprint committee headed by T. A. Corcoran of "The Louisville Courier-Journal" and "Times."

Site for the mill will be chosen somewhere within the two million acre Dierks' timber holdings in southwestern Arkansas and southeastern Oklahoma.

Hearst Considering Newsprint Mill for N. S.

It has been reliably reported that Hearst Publishing Co. is investigating the possibility of building a newsprint mill at Sheet Harbour, Nova Scotia. Hearst, through its subsidiary, Halifax Power & Paper Co., now owns and operates a groundwood pulp mill at this site. Present production at the mill of 100 tons of pulp per day is now shipped entirely to the Scott Paper Co.

It is stated that Hearst is considering a paper mill with a daily production of 200 tons of newsprint. The figure of $10 million is the amount reported as being the cost of the mill.

According to Hearst spokesmen, two key factors would have to be solved before the expansion could go ahead, and both have been laid before the Provincial Government: making sure the crown leases could be secured on timberlands, making sure enough low-cost would be available to support the operation; and low-cost power.

Gaylord Builds Another Box Plant

Gaylord Container Corp. has broken ground for a new corrugated box plant in Miami, Fla. Completion is scheduled for January, 1955. Walter Ilgen will be production manager and M. C. Andre sales supervisor of the Miami operations.

NEWS OF CONVERTERS OF PAPER AND PAPERBOARD

Longview to Build New Mill

Longview Fibre Co., Longview, Wash., has taken an option on the industrial site of about 70 acres on the north bank of the McKenzie River, a few miles north of Springfield, Ore. The land is owned by Christian Logging Co.

Longview Fibre Co. now operates a large plant at Longview, Wash., producing about 750 tons per day of paper products, including corrugated containers and a large variety of wrapping and specialty paper products. Corrugated container plants in Los Angeles, Oakland, and a new plant now building in Seattle are supplied with container board from Longview.

The company expects to build a plant on the Christian Logging site, which initially will employ over a hundred and fifty people, for the manufacture of 9 point corrugating medium. Wood waste in the form of chips will be used as raw material for the plant. No time table has been announced for the construction program.

Hearing on Sale of Paper Corp. of America

Federal Judge Thomas F. Murphy scheduled November 22 to hear rearguments on the sale of The Paper Corp. of American in Cheboygan, Mich.

The Judge recently had denied an application by the trustees to sell the paper mill to the Steiner Linen and Supply Co., of Chicago who had offered $400,000 for the plant.

At the same time, David Harr, attorney for the trustee for the bankrupt paper company said that he would offer a new plan of reorganization for court approval.

Plan $14 Million Issue To Double Dryden Output

Dryden Paper Co. plans to undertake $14 millions of financing in connection with a proposed $11.6 million expansion program and the retirement of $4,650,000 bonds and debentures now outstanding.

The expansion program at Dryden will increase the company's annual capacity by 1958 to 142,000 tons of saleable products (72,000 now). The increase will come entirely from expansion of bleached and unbleached kraft pulp capacity, from the 22,000 tons of market pulp now available to 92,000.

After the war, the company undertook a program to increase its capacity for conversion of pulp into paper and paper products, as well as its pulp capacity. The result has been that Dryden can now convert 70% of its pulp into paper. Capacity for manufacture of finished products in 1945 had been 29,000 tons annually, only half of it paper.

Federal Buys Grant Paper Box

Federal Paper Board Co. has purchased Grant Paper Box Co. of Pittsburgh, for $1,525,000, it was disclosed November 8 by John R. Kennedy, Federal president. The acquisition, part of Federal's expansion program, Mr. Kennedy stated is expected to add between $2 million and $3 million to annual carton sales and to strengthen the company's carton operations in Pittsburgh and western Pennsylvania areas.

He said the Grant plant can convert annually 10,000 tons of paperboard, which will boost the percentage of Federal's paperboard production fabricated in its carton plants. Grant has been a substantial paperboard customer of Federal since 1928.

In addition to its main office and board mill operation in Bogota, N. J., Federal Paper Board operates five other mills: two in Connecticut and one each in Maryland, Pennsylvania, and Ohio.

New Gair Corrugated Box Plant at Atlanta

Robert Gair Company announced last week that the Gair Co. will establish a new corrugated box plant at Atlanta, Ga.

"This plant, together with existing plants at Martinsville and Richmond, Va.," Mr. Dyke said, "will enable the Gair company to extend its service to manufacturers in the industrial centers of the South."

The company has leased, with option to purchase, a modern manufacturing plant now being erected at 1235 Chattahoochee Avenue, about five miles from the center of the city, and accessible to all points. Equipment will include a combiner and necessary auxiliary equipment for the manufacture of all types of corrugated shipping containers. The plant will receive its supply of paperboard from the company's kraft mill at Port Wentworth, Ga. Operation on about February 1, 1955, is scheduled.

New Hoerner Box Plant For Minneapolis

Hoerner Boxes, Inc., has announced plans for the construction of a new, modern corrugated box plant in Minneapolis, Minn. Construction is scheduled to start immediately and to be completed in early 1955.

The new building will contain approximately 135,000 sq. ft. of floor space. And it will be a modern, one-story operation constructed to permit the indoor loading and unloading of rail, cars and trucks.

The Minneapolis plant is the fourth in the chain of nine plants now operated by Hoerner Boxes, Inc. It was incorporated December 16, 1927, as the ABC Corrugated Box Co. and operated by its founders until January, 1937, when Hoerner assumed management of the company. The plant was moved from St. Paul to Minneapolis December 11, 1946 and enlarged to a full corrugating unit.

Officers of the company are: R. N. Hoerner, president; W. W. Jackson, executive vice-president; C. M. Carson, vice-president and general manager; and V. D. Shuck, secretary-treasurer. John C. Perry is sales manager; Marvin Embry, office manager; and Marshall L. Hutchinson, superintendent.

FIRST BOAT PACKAGING IDEA ever to win an award from the Society of Industrial Packaging and Materials Handling Engineers received a first-place blue ribbon at the Society's annual exposition in Chicago's Coliseum in September. Employing a laminated, waterproof, fiber-glass reinforced Kraft paper excelsior-filled blanket attached to a covering sheet of 200 pound test cardboard by pressure sensitive tape, this packaging method replaces heavy wooden crates formerly used. Advantages cited for the blanket method include: (1) faster packaging; (2) material weight saving, thus reducing freight charges; (3) complete protection of the boat from dirt and damage in storage and in transit; (4) a factory fresh clean boat on the dealer's floor. The new method was pioneered by the Dunphy Boat Corp., Oshkosh, Wis.

Marathon To Build Packaging Plant at Neenah

The Marathon Corp plans to build a new label printing and packaging specialty plant in Neenah, Wis.

It is being "tentatively designed" as a one story building with around 125,000 sq. ft. of floor space, the company said. The cost was not announced. A 50 acre tract on the North Western road's main line is to be acquired.

The proposed plant will augment the Menasha plant, which makes cheese wrappers, bread wrapper end labels, frozen food package overwrap and other specialty paper products. Operations include printing, protective coating and laminating of paper, foil and cellophane.

Ruberoid Plans Another Roofing Plant

The Ruberoid Co. will start building a new plant in Los Angeles, Calif. soon, Herbert Abraham, chairman, revealed at a recent celebration in honor of the company's 68th anniversary. Mr. Abraham said the new west coast plant will be built on aboue 22 acres recently acquired in Los Angeles. Initially, it will manufacture the full line of Ruberoid asphalt roofings and later may be expanded to produce asbestos-cement and other products. He estimated the new factory will employ about 200 people when production begins. Cost of the installations has not yet been determined.

Miller Erects Container Plant at Roanoke

Miller Manufacturing Co., Richmond, Va. is constructing a 50,000 sq. ft. plant in Roanoke to make corrugated containers. The plant is being built on a five-acre site in northeast Roanoke between the Shenandoah Valley Branch of the Norfolk and Western Railway and the Old Hollins Road it is to be half a mile north of U.S. 460.

T. Brady Saunders, chairman of the board of the Miller Manufacturing Co. said the name of the Roanoke plant will be Miller Container Corp. Major construction will be of steel and brick.

Lowe Paper Adds New Coated Board Line

Lowe Paper Co. is producing a new sheet, coated on the board machine, known as Ridgelo Standard Coated Folding Boxboard, to distinguish from their regular grade, processed through the Coating Department, which is now called Ridgelo Custom Coated Folding Boxboard. This broadens Lowe's line of products to include a complete range of grades of utility and decorative coatings for folding boxboard.

MUSICAL PACKAGE — A "first" in cereal packaging is being offered by General Mills, Inc. A 78 rpm 5¼ inch phonograph record made from acetate film has been attached to every package of Wheaties. All the consumer need do to have music while he eats is cut it out and play. Mary Ann Foley of Minneapolis, Minn., is shown here cutting a record out of the package prior to playing one of the eight song titles offered in this unique premium promotion. Each package carries one of eight all time popular hits plus a mail in offer for 32 additional songs on regular weight records.

Another Olin Cellophane Plant Planned

Construction of a second plant to manufacture Olin cellophane is expected to start about March 1, 1955 on a site to be known as Olin, Ind., located on the Wabash River between Covington, Ind., and Danville, Ill.

The plant will be engineered and constructed for Olin Mathieson under contract with E. I. du Pont de Nemours and Company. Olin's first cellophane plant at Pisgah Forest, N. C., has been in operation for over three years.

Marathon Converting Plant Makes Safety Record

Both highly deserved honors and a stimulating challenge have been delivered to personnel of the Marathon Corp.'s Wausau, Wis. division, following a celebration of the plant's outstanding safety record. For the second time, the paper converting plant has rolled up the impressive total of a million consecutive man-hours without a disabling injury, thus becoming the first division in Marathon Corp. history to duplicate the feat.

For this achievement, praise was expressed along with the challenge to extend the plant's current record of nearly 1,127,000 safe man-hours to two million. This would mean a new world's record for paper converting plants, as the all-time high is now 1,830,000 accident-free man-hours, held by a Philadelphia plant of the Container Corp. of America.

Live Lobster Pack

Now it is said live lobsters can fly to their destinations in cool comfort. That's the result of four years of research at Hinde & Dauch's Watertown, Mass., factory. Work there has developed a leak-proof corrugated box called the "Live Lobster-Pak."

Brine leakage and excessive package weight—which prevented almost all lobster shipment by air—were the two serious drawbacks to conventional wooden barrel shipment. Both disadvantages have been eliminated in the new leak-proof H&D box which holds 50 pounds of lobsters and weighs only 65 pounds packed.

The special characteristics of the shipper are inherent, not in the regular slotted box itself, but in specialized interior packing pieces designed for it: "Insulpak" insulation on top, bottom and all sides, a pair of paraffined trays; and a series of special water-absorbent pads. Seaweed, cracked ice and a preservative keep the lobsters cool and healthy in transit.

New Pressure Sensitive Tape

The introduction of a new printable pressure sensitive labelling tape available in a complete range of colors, has been announced by Permacel Tape Corporation, New Brunswick, N.J., manufacturers of industrial tapes. Designed as a self-sticking printable paper tape, Permacel 727 is used to carry printed messages for advertising, point of sale, eye-catchers on cash registers, display cases, stock shelves, change trays, display baskets, fixtures and other similar uses.

Coated with Permacel's new Anchor Coat backsize, which permits high speed printing with aniline or oil based inks, without danger of ink transfer, ink pick off, or delamination, P 727 can be employed in the labelling of such products as parts, packages, bottles and machinery plus other miscellaneous printed applications including special instructions, directions, manufacturers' name-plates and inspection marks.

Rayonier Announces New 31,095-Acre Tree Farm

A 31,095-acre tree farm has been established this month as a part of the forest holdings of Rayonier Incorporated in the Pacific Northwest. Known as the South Harbor Tree Farm, it was certified by the Industrial Forestry Assn. meeting at Portland, Ore., earlier in the month.

M. B. Houston, assistant to the president of Rayonier, said that the new tree farm was "an additional major step toward bringing all of the company's 861,969 acres of forest properties to the optimum seed-growth-harvest cycle."

Fraser Paper's New Machine

A detailed description of the new paper machine and auxiliary equipment installed by Fraser at Madawaska.

Specifically designed to produce a range of light and medium weight bleached chemical woodpulp papers, the new paper-making machine recently installed in the bond mill of Fraser Paper, Ltd., is now in continuous operation.

This machine replaces the original No. 4 machine installed in the mill in 1928, three years after the mill began operations at Madawaska. The old machine was shut down in June of this year and was dismantled and sold for use elsewhere.

Manufactured by Pusey and Jones Corp., the new machine incorporates the latest principles in the engineering of paper-making equipment. With overall dimensions of some 300 feet in length and 55 feet in width, it is designed and physically balanced to operate up to a speed of 2000 feet per minute and will add some 10,000 tons of paper to the mill's annual capacity.

Structural Changes

Since the new machine is wider than the old one, the pit was widened fifteen inches to provide clearance for the wider dryers and easier broke removal. Consequently, all supporting steel on the tending side of the machine had to be relocated. A penthouse was constructed to house the ventilating fans and economizers. A new electric substation was also erected on the west side of the mill. On its ground floor are housed the motor-generator sets and motor controls for the major units of the machine. The second floor accommodates stock preparation equipment.

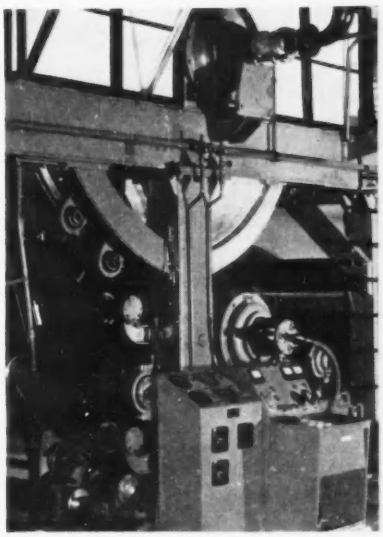
Stock Preparation

A new tile beater dump chest and tile machine chest were built. Four Morden stockmakers and a DeZurik consistency regulator were installed. There are two Goulds fan pumps having a capacity of 12,000 g.p.m. at 40 foot head. A system of Bauer cleaners is located ahead of the four 2A Bird screens. Each fan pump has air operated throttling valves. The flow from these is automatically controlled from the level of stock in the Bird screens. All stock and white water piping is made of stainless steel or copper.

Headbox, Wire and Presses

The machine is equipped with a Beloit air cushioned headbox with stainless steel lining. The fourdrinier takes a 196″ x 94′–2″ wire. It has a dual breast roll arrangement, micarta tipped forming board, and micarta deflectors. All parts of it in contact with the stock are sheathed in stainless steel. The table rolls are rubber covered and the wire return rolls are of stainless steel. The suction couch roll is 44″ in diameter with a six to ten inch adjustable suction box. There is a 24″ separately driven dandy roll and a lump breaker roll with air loaded cylinders. The wire stretch rolls are raised and lowered hydraulically.

The press section is a Simplex type having two 36″ diameter rubber covered suction press rolls, the first press having a four inch suction box and the second press having a four to eight inch adjustable box. The felt stretchers are operated by air motors. Felt cleaning is accomplished with suction boxes and Vickery felt conditioners. The bottom roll only of a future smoothing press is located in the receiving dryer position.



Yankee dryer of new No. 4 machine. At left is size press and in right foreground is one of the console type control panels.

Pre-Dryer Section

In the pre-dryer section there are 23 paper dryers of 5 feet in diameter, 8 felt dryers of the same diameter, and one transfer dryer 3 feet in diameter. All dryers are built for 75 pounds steam. The gear train is enclosed and anti-friction bearings are used throughout on the dryers and felt rolls. The automatic felt stretchers are motor driven.

Yankee Dryer

The Yankee dryer is 12 feet in diameter and built for 125 pounds pressure. It is equipped with Sunday drive. Two pressure rolls of 24 inches in diameter are used. The rope system for carrying the paper is so arranged that the paper can bypass the Yankee dryer if desired.

Size Press

The size press is equipped with a rubber covered bottom roll and a pneumatically loaded brass top roll. It is followed by a steam heated 24″ set roll separately driven and a Mt. Hope expander roll. If necessary, the size press can also be bypassed.

After-Dryers

In this section there are eight paper dryers of five feet in diameter each and built for 125 pounds pressure. The gearing is enclosed and there are anti-friction bearings throughout. The felt stretchers are motor driven and operate automatically.

Calender Stack

The calender stack has eight rolls carried in steel frames and anti-friction bearings. The rolls are raised, lowered, and loaded hydraulically. The bottom roll is of the anti-deflection type. The doctors are pneumatically loaded and hydraulically oscillated.

Reel and Winder

The reel is a Pope type with horizontal track, pneumatically loaded. There is a motor accelerator for reeling mandrels. The reel drum is water cooled. The winder is Cameron type 19. It has

an hydraulically operated roll lowering table for removing rolls from the winder.

Oiling System

All dryer bearings, enclosed gearing in dryer sections, and calender roll bearings are automatically lubricated. The capacity of this system is approximately 4500 gallons.

Drive

The machine is driven by a Reliance sectional generator type drive having a range of from 500 to 2000 f.p.m. A slack take-up is used on the calender section only. In addition, helper drives were supplied for the following units: First return wire roll, dandy roll, lump breaker roll, couch draw roll, Yankee pressure roll, and size set roll. The motors are force ventilated by a central cooling fan and ductwork system. The controls for the individual drive motors are located in console type panels on the tending side of the machine which also contain controls for much of the auxiliary equipment.

Dryer Drainage System

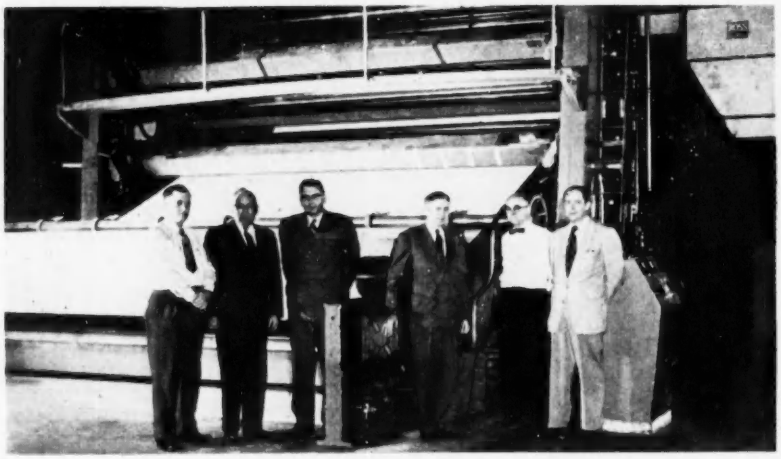
The dryer drainage system was supplied by Midwest-Fulton. A separate 250 pound steam line was installed for the Yankee dryer direct from the boiler house with pressure reducing and desuperheating equipment. Steam for the pre-dryers and after-dryers, as well as the felt dryers, is supplied from the extraction steam from the turbines at 25 p.s.i. By means of differential controls, various sections can be supplied from the flash steam from the other sections. The first six dryers in the pre-dryer section and the first four dryers in the after-dryer section can be individually controlled to provide graduated temperatures.

Ventilating System

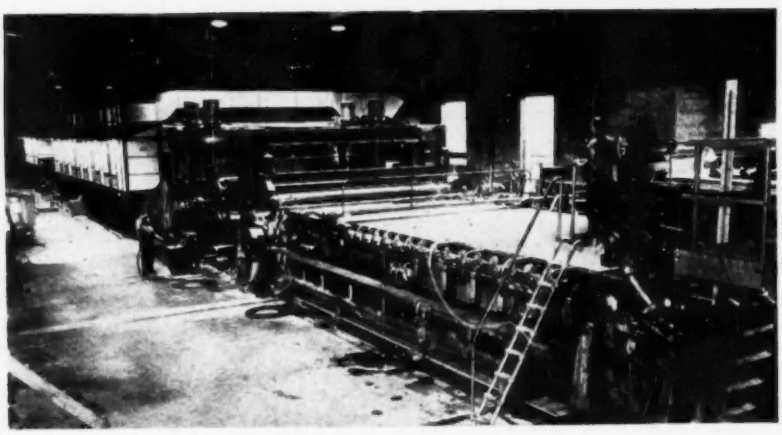
Ross open hoods and ventilation system with stainless steel economizers are installed on the machine. The Yankee dryer is equipped with an exhaust fan, economizer, and supply fan for a vapor absorption system. No economizer is used on the after-dryer section. Two fans supply outside air to the center aisle of the machine room. In the basement there are three units for the felt drying system. All supply fans are equipped with filters and automatic face, bypass, and recirculating dampers.

Starch System

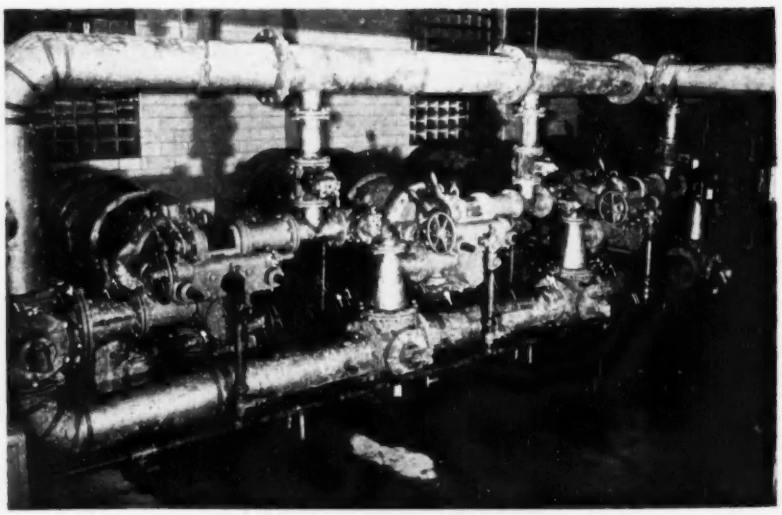
Two stainless steel starch tanks of 200 gallons capacity each were erected to hold the starch to be supplied to the machine. These tanks are fed automatically from a central starch preparation system.



Some of the men chiefly responsible for the installation of the new machine are (L to R): J. W. D. Hierlihy, mill manager; S. M. Bratton, chief engineer, Pusey & Jones Corp., Wilmington, Del.; Aubrey Crabtree, president, D. A. Forbes, chief engineer, and J. S. Reed, superintendent of the bond mill, Fraser Paper, Ltd.; and S. G. Briscoe, sales engineer, Pusey & Jones Corp., Hartford, Conn.

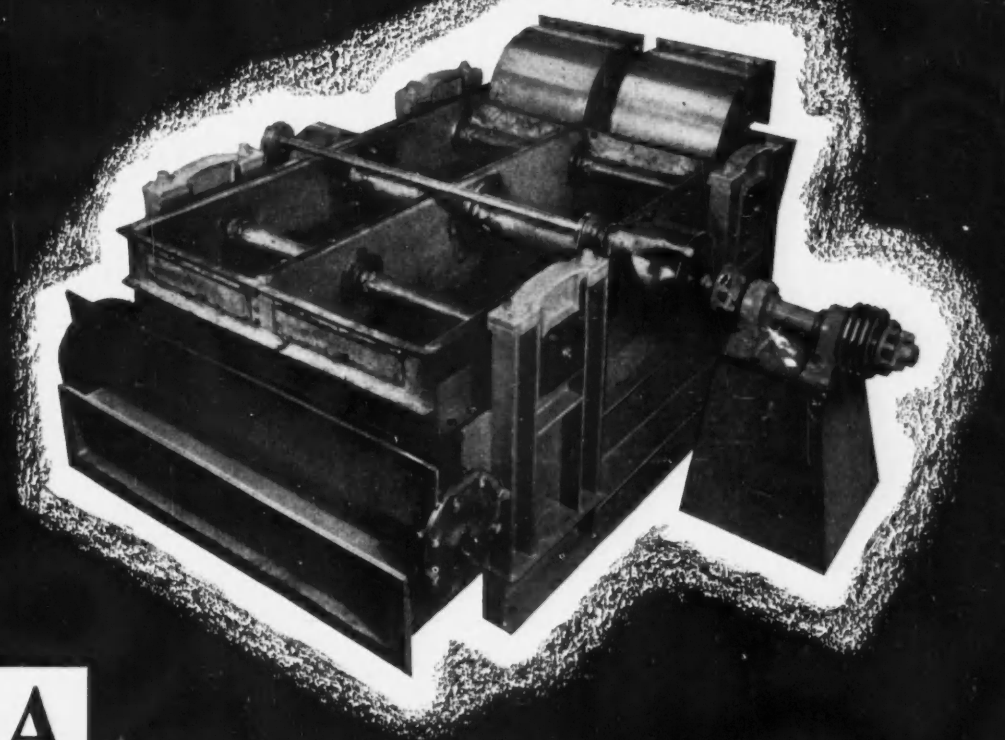


At the wet end of the new machine may be seen the Beloit pressure headbox, stainless steel fourdrinier, and simplex press arrangement.



The Morden stockmakers for the new No. 4 machine.

Question: Why does the BIRD JONSSON SCREEN deliver better screened stock and more of it per day at lower cost per ton than other perforate plate screens?



Answer: The BIRD JONSSON SCREEN employs high frequency, precisely controlled *circular* vibration in combination with a specially shaped screening area. Rejects are whisked out with extreme rapidity. Knots, slimes and dirt are given no opportunity to bounce around on the screen plates and get broken up.

The Bird Jonsson Screen delivers 80 to 100 tons of 1½% sulphite, 150 tons or more of 2½% groundwood or sulphate per day. There is minimum loss of good fibres in the rejects. Power is as little as six hundredths HP per ton.

Recommendations, layouts and estimates will be on your desk whenever you say the word.

BIRD MACHINE CO.
South Walpole • Mass.

Current Analysis of Paper and Paperboard Container Industry

Paper Milk Containers

Production of paper milk containers in the second quarter was approximately 7 per cent above the corresponding period of 1953. Compared with the first quarter 1954 volume, however, output was off about 8 per cent. Container production for the first half of 1954 was approximately 9 per cent above the first six months of 1953. Container requirements in the third quarter are expected to improve over the second and hold through the final quarter with the total for the year above the 1953 volume.

Second Quarter Production of Special Food Board, 1954-53
[Short tons]

	1954	1953	Percentage change 1954 to 1953
April	79,322	74,466	+6.5
May	84,787	78,906	+7.5
June	87,393	79,972	+9.3
Total	251,502	233,344	+7.8

Source: Bureau of the Census.

Corrugated and Solid Fibre Shipping Containers

Second quarter production of container board was 5.0 per cent below the second quarter 1953 total. For the same period, liner output decreased 4.4 per cent as did corrugating material by 4.1 per cent and chipboard by 16.5 per cent. Second quarter output of liners increased 65,725 tons or 6.3 per cent over the first quarter 1954 total. Similarly, production of corrugating material and chipboard increased 6.3 per cent and 8.4 per cent, in that order, as total container board output increased 6.4 per cent. Production of container board for the first six months was below the comparable period of 1953. Total production decreased 192,904 tons or 5.7 per cent. Liner output decreased 114,819 tons or 5.1 per cent and corrugating material output decreased 50,680 tons or 5.5 per cent from the total of the first six months of 1953. For the same period, container chipboard production decreased 15.7 per cent.

Second quarter consumption of container board in box plants increased 3.1 per cent above the first quarter 1954 total. Compared with the second quarter of 1953, however, consumption decreased 5.9 per cent. Similarly, in the first six months of 1954, manufacturers used 6.1 per cent less container board in box production than in the same period of 1953.

Second Quarter Production of Set-up Boxboard, 1954-53
[Short tons]

	1954	1953	Percentage change 1954 to 1953
April	57,666	65,467	—11.9
May	55,508	64,050	—13.3
June	59,307	69,123	—14.2
Total	172,481	198,640	—13.2

Source: Bureau of the Census.

Demand for corrugated boxes in the second quarter was below the corresponding quarter of 1953; decreases varied from 2 to 10 per cent. Business for the first half of 1954 was, similarly, less than in the same period of 1953. Compared with the first quarter of 1954, second quarter box operations were improved with gains of "slightly" to 10 to 15 per cent typical. Order backlogs were normal to slightly lower as buying continued on a hand-to-mouth basis. Box inventories at the user level were low although some inventory building was apparent. Raw materials were plentiful with prices unchanged. Raw material inventories were maintained at near the cut-up rate. Box prices were steady to slightly lower. Box plant operations in July were slow as result of vacation shut-downs. Business for the balance of the third quarter is expected to be improved with seasonal demands holding strong through most of the fourth quarter.

Set-Up Paper Boxes

Operations of the set-up paper box industry in the second quarter were slightly below the first quarter level. The decrease in second quarter shipments as compared with the preceding period was approximately 2.0 per cent. The volume of second quarter demand compared with the same period of 1953 varied considerably between areas and also manufacturers. In the New England area, for example, business was off approximately 11 per cent although several box makers operated at near capacity. In contrast, box demand in the Middle Atlantic area improved over the second quarter 1953 total with box manufacturers registering gains of up to 25 per cent. Orders were for small quantities and immediate use as box inventories were at minimum levels. Box prices were generally steady although scattered concessions were noted in several areas. Raw materials were plentiful. Board prices were steady to slightly lower. Inventories of raw materials were normal. Business outlook for the last half of the year is "good" as seasonal demands are expected to become sizable by the middle of the third quarter.

Production of set-up box board in the second quarter was down 6.9 per cent from the first quarter 1954 total of 183,293 tons. Similarly, second quarter output was below the comparable period of 1953; the total decrease was 13.2 per cent. Total output of set-up boxboard for the first six months of 1954 was 8.4 per cent below the 388,433 tons of the first six months of 1953.

Second Quarter Production of Container Board, 1954-53
[Short tons]

	Liners			Corrugating material			Container chipboard			Total		
	1954	1953	Percentage change	1954	1953	Percentage change	1954	1953	Percentage change	1954	1953	Percentage change
April	353,527	385,979	—8.4	144,431	154,232	—6.4	24,845	29,155	—14.8	522,803	569,366	—8.2
May	387,215	383,858	+0.9	147,715	161,057	—8.3	25,746	30,354	—15.2	560,676	575,269	—2.5
June	368,127	390,591	—5.8	160,904	157,117	+2.4	25,867	32,019	—19.2	554,898	579,727	—4.3
Total	1,108,869	1,160,428	—4.4	453,050	472,406	—4.1	76,458	91,528	—16.5	1,638,377	1,724,362	—5.0

Source: Bureau of the Census.

WOODPULP—on the move!

Weyerhaeuser woodpulp courses steadily along the economic by-ways of the nation, finding its way into hundreds of diversified end-products that improve our daily living. Vast, varied industries depend upon an uninterrupted supply of this essential raw material which is such a vital part of the American economy.

Less than a quarter of a century ago, a large portion of a tree that could not be economically converted into useful products was burned or allowed to rot. Modern concepts of full wood utilization and sane forestry management were not then economically feasible.

Today, Weyerhaeuser Timber Company processes convert the tree's raw materials into useful and marketable products. The best possible value and utility are obtained from each tree harvested.

Diversification in processing is the key to complete wood utilization. New products from woodpulp mean expanding markets and steady payrolls.

Good forestry practices plus laboratory research assure industry of a long-term, never-ending supply of Weyerhaeuser woodpulp.

WEYERHAEUSER

Second Quarter Production of Bag Paper, 1954-53
[Short tons]

	1954			1953			Percentage change 1954 to 1953		
	Total	Unbleached kraft	Other*	Total	Unbleached kraft	Other*	Total	Unbleached kraft	Other*
April	74,539	70,303	4,236	70,193	65,817	4,376	+6.2	+6.8	—3.2
May	80,854	76,583	4,271	73,630	69,074	4,556	+9.8	+10.9	—6.3
June	68,368	64,143	4,225	68,216	63,261	4,955	+0.2	+1.4	—14.7
Total	223,761	211,029	12,732	212,039	198,152	13,887	+5.5	+6.5	—8.3

*Excludes glassine and greaseproof paper and vegetable parchment.
Source: Bureau of the Census.

Paper Bags

Production of bag paper in the second quarter increased over the second quarter 1953 volume. Total output of bag paper increased 5.5 per cent as an increase of 6.5 per cent in unbleached kraft more than offset a 8.3 per cent decrease in all other types. Compared with first quarter of 1954, production decreased 1.8 per cent in total with unbleached kraft down 2.0 per cent whereas all other types of bag paper increased 1.8 per cent. Bag paper output for the first six months was 7.5 per cent above the total of the corresponding period of 1953. For the same period, unbleached kraft production increased 8.1 per cent whereas all other bag paper decreased 2.4 per cent.

Operations in the paper bag industry were, in general, fairly quiet through the second quarter although demands for grocery bags are better than expected. Bag demand was slightly below the second quarter 1953 volume. Bag prices were steady during the period. A slight increase in the price of several types of bags occurred during the early part of July. Stocks of bags in users hands were lower than in 1953. As a result, ordering was generally for immediate delivery. Raw materials were plentiful at steady prices. Prospects are favorable for business picking-up substantially in the Fall months and holding through most of the fourth quarter.

Fibre Cans and Tubes

Fibre can and tube sales in the second quarter were 17.1 per cent below the comparable period of 1953. Compared with the first quarter of 1954, however, shipments were heavier; the increase amounted to 3.8 per cent. For the first six months of 1954, fibre can and tube sales were 15.2 per cent below the correponding period of 1953. Whereas, in general, commercial business remained satisfactory, the cancellation of government contracts was a major factor in the reduced volume of total demands.

Fibre can sales for the first six months were 14.3 per cent below the same period of 1953. Also for the first six months, sales of spiral tubes and cores, convolute tubes and miscellaneous specialties were 14.4 per cent, 18.2 per cent, and 18.2 per cent, respectively, below the 1953 volume.

Second quarter sales of cans, spiral tubes and cores, convolute tubes and miscellaneous specialties were below the second quarter 1953 total; in the order of the products listed, decreases amounted to 17.8 per cent, 15.1 per cent, 11.6 per cent, and 18.0 per cent.

With the exception of miscellaneous specialties, second quarter shipments of fibre cans and tubes were heavier than in the first quarter of 1954. Sales of cans, spiral tubes and cores, and convolute tubes increased 6.6 per cent, 3.3 per cent, and 0.4 per cent, in that order. Second quarter sales of miscellaneous specialties were 3.3 per cent below the first quarter total.

Orders for smaller quantities were prevalent with users ordering more frequently than in previous periods. Containers inventories were low. Prices were down on many products. Raw materials were plentiful at steady cost. Business outlook for the industry is fairly optimistic with the normal seasonal pick-up expected in the third quarter.

Folding Paper Boxes

Second quarter production of folding boxboard decreased from the totals of both the first quarter of 1954 and the second quarter of 1953. The decrease amounted to 0.4 per cent from the former quarter and 3.2 per cent from the latter period. Similarly, the total output for the first six months was 2.2 per cent below the same period of 1953.

Second Quarter Production of Folding Boxboard, 1954-53
[Short tons]

	1954	1953	Percentage change 1954 to 1953
April	196,462	211,835	—7.3
May	198,308	202,414	—2.0
June	207,156	207,426	—0.1
Total	601,916	621,675	—3.2

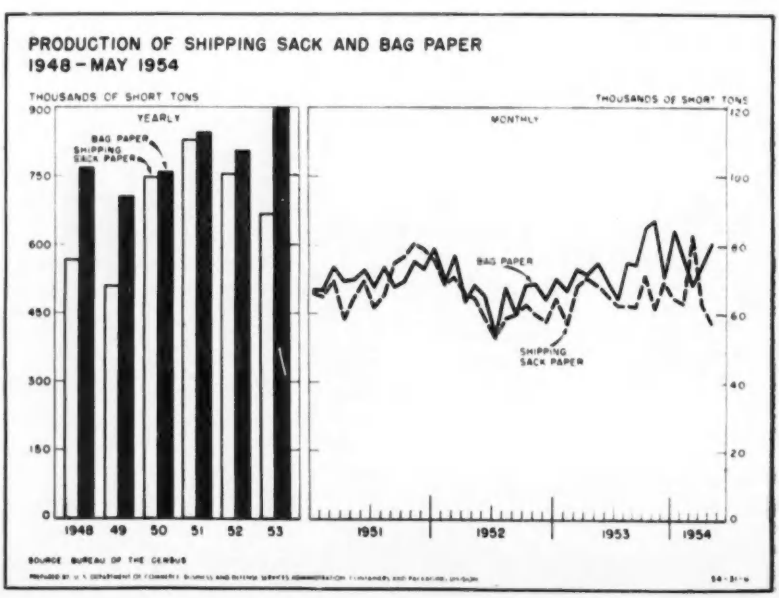
Source: Bureau of the Census.

Second Quarter Production of Paper and Paperboard, 1954-53
[Short tons]

	1954	1953	Percentage change 1954 to 1953
April	2,185,527	2,268,642	—3.7
May	2,238,313	2,266,946	—1.3
June	2,269,912	2,269,410	+0.02
Total	6,693,752	6,840,998	—2.2

Source: Bureau of the Census.

Second quarter box shipments, as measured by dollar volume, were 0.9 per cent above the second quarter of 1953.



Tonnagewise, shipments for the second quarter dropped 3.0 per cent below the comparable period of 1953. The value of shipments billed in the second quarter decreased 3.7 per cent from the first quarter 1954 total although the total for the first six months was 1.5 per cent above the 1953 volume. The total tonnage of second quarter box shipments was 3.0 per cent below the corresponding period of 1953. Also, second quarter shipments were 2.4 per cent below the first quarter tonnage with the total for the first six months 1.7 per cent below the 1953 total for the same period.

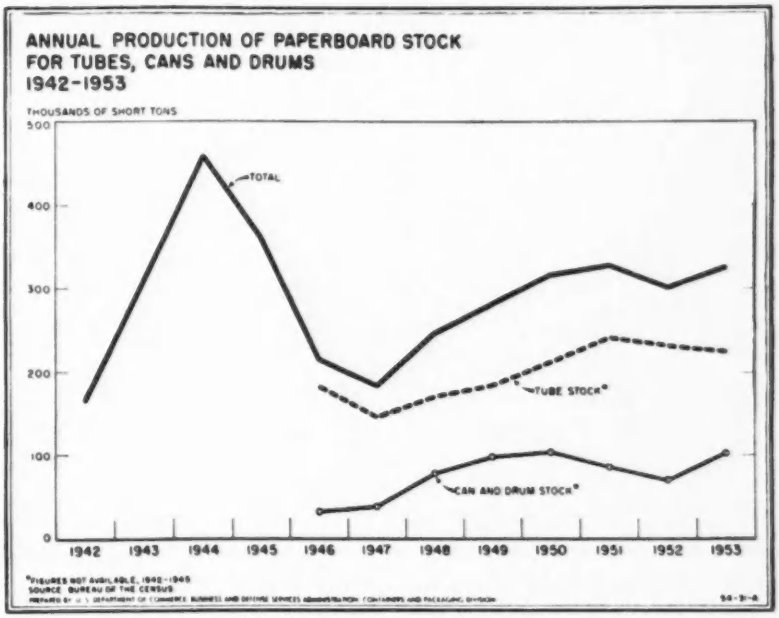
Second quarter folding paper box volume, as measured by orders entered, was slightly above the dollar volume of the second quarter of 1953; the increase amounted to 0.9 per cent. For the same period, the tonnage of orders entered dropped 3.6 per cent. Compared with the volume of orders entered in the first quarter of 1954, the dollar volume declined 2.9 per cent as did tonnage by 6.3 per cent. Dollar volume of orders entered for the first six months of 1954 increased 0.4 per cent over the same period of 1953. Tonnage of orders entered for the same period decreased 3.3 per cent.

For April 1954, dollar volume of orders entered increased 2.5 per cent over the April 1953, with the tonnage off 2.0 per cent. Also, the dollar volume and tonnage of shipments billed increased 5.1 per cent and 2.5 per cent, respectively, in April 1954 over April 1953.

During May, orders declined 9.3 per cent in dollar volume although increased 1.4 per cent in tonnage as compared with May 1953.

Business for June was above June 1953. Orders entered increased in both dollar volume and tonnage; the former by 5.0 per cent and the latter by 0.6 per cent. Similarly, dollar volume of shipments increased 5.4 per cent as did tonnage by 0.5 per cent.

Box inventories at the user level continued close as orders were placed for immediate delivery. Box prices were generally steady although variations within 2 per cent were noted in several areas. Raw materials were ample at firm cost. Raw material inventories were normal. Although business in July was slow, a post-vacation seasonal upswing is expected with improved demands holding through the fourth quarter.



Second Quarter Production of Paperboard, 1954-53

[Short tons]

	1954	1953	Percentage change 1954 to 1953
April	973,816	1,045,023	—6.8
May	1,018,933	1,042,314	—2.2
June	1,033,042	1,063,111	—2.8
Total	3,025,791	3,150,448	—4.0

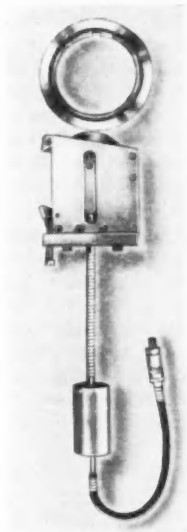
Source: Bureau of the Census.

Second Quarter Production of Glassine and Greaseproof Paper and Vegetable Parchment, 1954-53

[Short tons]

	1954	1953	Percentage change 1954 to 1953
April	10,769	12,723	—15.4
May	10,766	11,168	—3.6
June	10,513	12,225	—14.0
Total	32,048	36,116	—11.3

Source: Bureau of the Census.



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Drift of the Industry to Integration

E. P. Nuttall
Associate Editor, Paper Trade JOURNAL

Powerful Undercurrents Are New Capacity, Market Expansion, High Freight Costs and Quick Profit

Of all current industry affairs, by far the most engrossing is the steady move by paper and board companies to integrate their mill output with converting operations. Rated the most-guessed-about, most-gambled-on topic wherever paper men congregate, these so-called vertical mergers represent an active trend which, according to financial circles is on the mount.

Differing from the horizontal mergers where the marketing of similar products is involved (and thus is held suspect by the Federal Trade Commission), these vertical mergers are impelled on the one hand by the desire to market full production, particularly where new capacity is involved; to lessen freight costs by moving the producing mill near to the potential market; by the will to improve the profit percentage through product diversification and economy of operations. For the seller, the chief motivation often is a quick and satisfactory profit.

In the opinion of Blyth & Co., through whom many important mergers recently have been arranged. "The underlying forces which motivate mergers and acquisitions appear to be about equally divided between those who desire to sell and those who desire to buy going business concerns. Aggressive management of growing companies often finds it advantageous to expand geographically or to diversify in product lines by acquisition of other enterprises."

Operation Merger In Reverse

A obvious example of both geographical expansion and product diversification is in the recent integration of Hollingsworth & Whitney Co. with the Scott Paper Co., and the earlier purchase of Detroit Sulphite Pulp & Paper Co., whereby Scott now has producing mills in the northeast, southeast, west coast, midwest, and the parent company in Chester, Pa.

Unofficially, these purchases are looked on as preparation for expanding markets and product diversification; part of the planning described by President Thomas B. McCabe in his last annual report, February 20, 1954, as "an ambitious program for substantially increasing sales over the next five years." Mr. McCabe's planning for widening markets and reducing distribution costs are glimpsed from his conviction that there exists an industry need for fundamental distribution research which would be aimed at reduction of marketing costs and consequent lowering of prices and widening of markets.

Said the Scott president to his stockholders, "Sales, production, employment and earnings could be given greater stability through better knowledge of how to stimulate consumption. New products on which the expansion of our economy depends could be more effectively introduced at lower cost. . . It is my personal conviction," he stated, "that scientific distribution, backed by continuing fundamental research, will open a limitless future of dynamic industrial growth and great prosperity for the individual, the nation and the world."

Pending announcement of scheduled plans for the H&W acquisition, the product direction of the Scott Co. integration is everyone's guess. No one doubts that this major enterprise will continue the forward movement that during 80 years has taken it through the various stages from pushcart paper jobbers in the Quaker City to an over $98 million producer of quality household and industrial tissues.

Like Crown-Zellerbach Corp. and Bowaters in newsprint, Scott started as a jobbing establishment, moved in reverse to paper production, back again to woodlands operation and pulp production, and forward again to integration of raw material through to conversion of the finished consumer product.

New Capacity Motivation

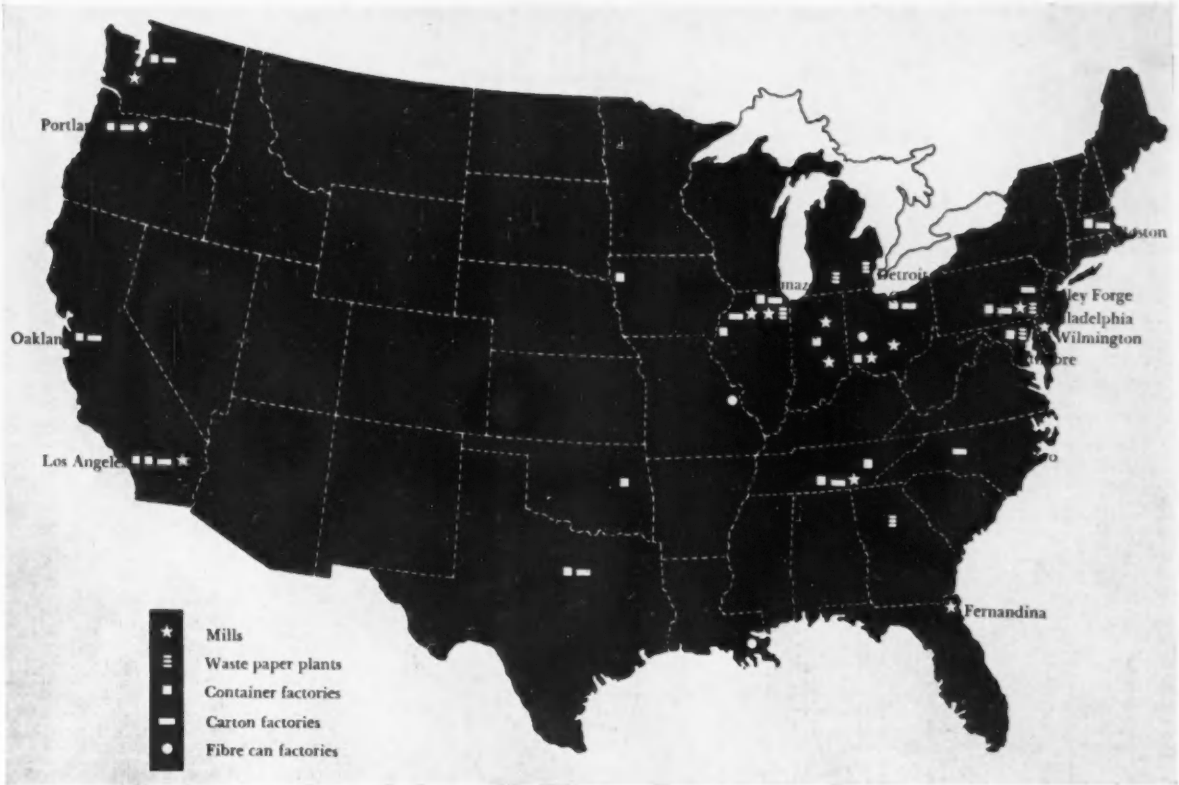
Outstanding examples of the need to expand markets for new production, as also to protect those already established, are present in the southern kraft container board mills which this year have been absorbing a demand dip in kraft board. (Output for the year the National Paper Assn. estimates will be 5.5 percent less than the 1953 peak.)

It can be flatly stated without fear of challenge that the trek to integration in paperboard and containers is motivated by these two major facts: (1) new containerboard capacity of 770,000 annual tons which through machine improvements and installations will make annual containerboard capacity some 7,470,000 tons; and (2) the lowered demand for container induced by the adjustment of hard goods inventories in particular, and other recessive tendencies present in the national economy.

West Virginia Pulp and Paper Co.'s purchase of Hinde & Dauch Co. is at least in part such an example. By the acquisition of H & D three mills—producing 80,000 annual tons of strawboard, corrugating medium and jute liner—and 12 container plants, Westvaco entered the corrugated shipping container for the first time and provided a market for a portion of its 700 daily tons of kraft board.

An important fabricator of shipping containers, and largest manufacturer not producing its requirements of board, Hinde & Dauch Co. acquisition looked interesting to several board producers. International Paper Co. and West Virginia both had long-term contracts to supply the box company with container board. St. Regis Paper Co. was looked on as a sure purchaser.

Westvaco who had been weighing the merger for five years, came to a quick decision. In a maneuvre which took the market by surprise, the Luke group snatched the H & D container package from the St. Regis doorstep at 230 Park Avenue, New York, and lifted it to the 13th floor from where "it will be operated as a subsidiary of West Virginia Pulp and Paper Co. with the operations, personnel and customer relationships of the two companies continuing as they are at present," read the release of August 21, 1953.



CONTAINER CORP. with twelve paper mills and twenty-two box plants is either a paper mill with a lot of box plants or vice versa.

For the fiscal year ended October 31, 1954, Westvaco was to supply about 25,000 tons of board to H & D, company officials said. A probable increase of 50,000 to 70,000 tons could develop in the ensuing year as a result of the closing of H & D's jute board mill at Gloucester, N. J., and a strawboard mill at Sandusky, Ohio,—both rated as high-cost operations. A contract between H & D and International Paper Co. for 80,000 annual tons of kraft board does not expire till 1958, it was said.

Shareholders of Hinde & Dauch Paper Co. stock received for each of their shares, one and one-third shares of new West Virginia common stock, after a four-for-one split of its common. The new stock has a par value of $5, and authorized shares were increased to 7,500,000.

Woodlands, Chemicals, Product Diversification

A shining example of integration of woodlands operations, chemical production, pulp and paper manufacture and product diversification, Westvaco also sells bleached food and cup stock, also multiwall sack paper and kraft paper to converters.

Also it supplies its full needs of steam and electricity, and some of the mills produce chlorine, caustic soda and chalk for own use, and recover activated carbon, tall oil and crude terpenes which are marketed through its Industrial Chemical Sales Div., and through the Polychemicals Div. is broadening the sale of lignin.

The company owns and manages more than 750,000 acres of timberland, mostly in North and South Carolina, which are operated, says West Virginia, in accordance with modern scientific tree-farming methods to provide continuing yield and regrowth. The company's forest management program includes such activities as soil analysis and evaluation, drainage projects, road construction, sylvi-cultural research, forest genetics, and fire protection and suppression. As part of its forestry development program, the company maintains a 20,000-acre experimental forest in South Carolina, where broad studies in modern forest techniques are carried out.

A major exponent of the policy that product diversification brings steady growth, its present production of nearly 800,000 annual tons is divided between white printing and fine papers — the Company's first line of paper products— white converting papers and boards, and kraft paper and container board.

Is Cup Company Merger Dormant?

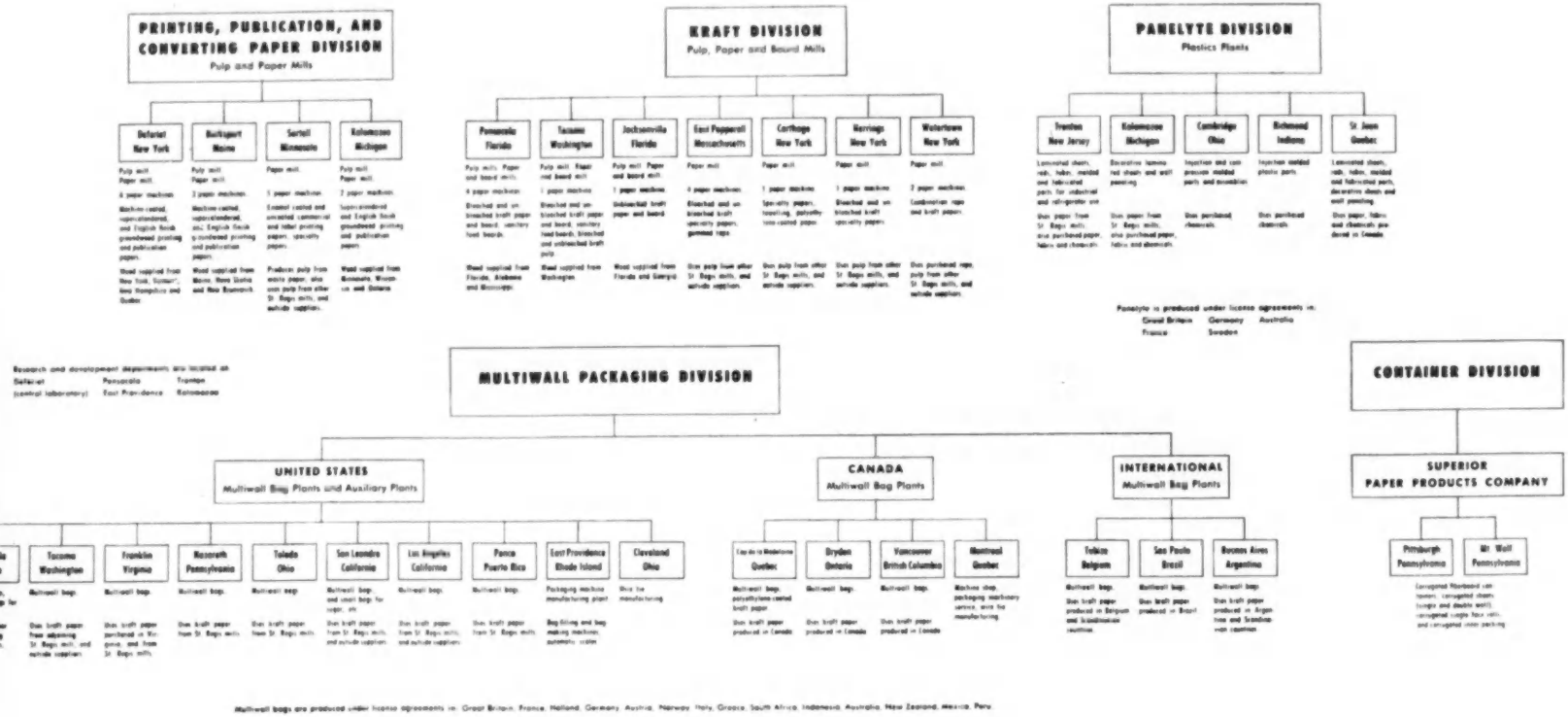
Rated a major and rapidly-growing segment of Westvaco's total output is its large volume white food and cup boards which are manufactured to exacting converter specifications for use in ice-cream and liquid containers, frozen food packages, milk cartons and caps, and drinking cups. So long as men will speculate, this unconverted bleached board of West Virginia's continues "one for the books."

Reportedly it was involved in the oncelively Lily-Cup merger gossip, which, to use the Scottish phrase, "fell between two stools."

As late as last May, Scott Paper Co. was rumored to be interested in buying either Lily-Tulip Cup Corp. or Dixie Cup Co. The Chester, Pa. company had just announced expansion plans; they had requisite pulp stocks, men believed; and the purchase of one of the major cup converters was looked on as *a natural*, particularly since distribution would be made through Scott's already established accounts. Lily-Cup officials made a definite denial of any such negotiations; Dixie was said to be uninterested; and still men were sure they had inside information and kept the Stock Exchange busy for some weeks.

ST. REGIS PAPER COMPANY · MILLS AND PLANTS

United States · Canada · Europe · South America



EXTENSIVE INTERESTS OF ST. REGIS Paper Co. are shown in the above chart, specially prepared for Paper Trade Journal. Originally a newsprint, and other printing paper company, it has branched out until it is a giant in the multiwall bag business. With extensive board production facilities, St. Regis appears to be moving strongly in the box field.

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HOW WEST VIRGINIA entered the converting field in a big way is shown in this map.

So far as can be learned, that deal is as dead as this year's perennials. And a factor believed to be involved is that the major cup producers are on long-term contract to three or more board mills. Thus acquisition by Scott was considered a good long-term investment; for the near future, however, the purchaser could not integrate with pulp and paper supply.

Whether all of this cup talk was in the realm of pipe-dreams will some day be known. Where there is so much smoke, men will look for fire. And they will continue to eye the bleached foodboard output of the West Virginia Pulp and Paper Co. as a prospect for further integration.

St. Regis Looking Around

Having lost the Hinde & Dauch Co. acquisition to Westvaco, St. Regis Co. is scanning the industry for prospects aimed at bolstering its earnings position through integration.

During April, 1954, the purchase of Superior Paper Products Co. Inc. of Pittsburgh, Pa. was announced, thus bringing into the St. Regis family two corrugated box plants at Mt. Wolf and Pittsburgh, Pa. According to active industry rumors, a dicker with Gaylord Container Corp. of St. Louis, Mo. is being worked out.

Already integrated from woodlands to box and bag plants, Gaylord is seen as an extremely advantageous merger. Through the purchase of Fairfield Paper & Container Div., Baltimore, Ohio, Gaylord now has 3 paper and board mills and 10 box and bag plants. With 473,000 acres of woodlands in Louisiana and Mississippi supplying pulpwood to paper mills at Bogalusa, and box and bag plants at St. Louis, Bogulasa, Beaver Falls, Pa., Houston, Tex. and other points, Gaylord supplies bleached and unbleached kraft containers, heavy-duty shipping containers, knock-down solid fibre tents, V-boxes, kraft bags and sacks, kraft wrapping paper and specialties, tall oil, turpentine and tung oil. Through the second phase of its mill expansion program, it plans to produce more of the required basic materials for converting plants. It is however not self-sufficient in supply.

St. Regis on the other hand is aggressively advancing toward fuller integration, with new pulp, paper and board capacity at Pensacola and Jacksonville amounting to 200,000 tons a year. Now the third largest paper concern in the United States, with net worth of over $191 million at the close of 1953, St. Regis is rated one of the most diversified of the paper companies, largest fabricator of multiwall shipping sacks in the world, and a major producer of kraft paper and printing papers. Also it makes bleached kraft paper, food and cup stock, and supplies bleached and unbleached kraft pulp of prime quality to the market, makes plastic laminates, bagmaking and filling machinery; and has technical aid agreements with 13 licensees who manufacture multiwalls in Europe, Africa, Central and South America, and the East Indies. St. Regis also has technical aid and licensing agreements with five companies who manufacture Panelyte plastic products for the European and Australia-New Zealand markets. (See accompanying diagram). It does not own or operate any box container plants save those acquired through the purchase of Superior Paper Products Co.

Pulpwood from company timberlands and from contractors provide 1,100,000 cords of pulpwood a year. In 1953, about 70 percent of the wood was purchased, the company's policy being to buy substantial quantities to preserve the growing timber on its own land of more than two million acres. About 75 per cent of these lands it owns in fee; on the remainder, it controls the standing timber through long-term cutting rights. More than 300,000 acres of woodlands support the Pensacola mill in southern Alabama and northwestern Florida.

On 42,000 acres of these holding, St. Regis owns all the minerals; on 171,000 acres, an undivided one-half interest in the minerals; on the remainder, up to one-half interest in the minerals. Near these holdings, says the Annual Report, the Pollard Field in southern Alabama has been developed by three major oil companies which now have 33 producing wells there. Stanolind Oil & Gas Co. has leased an 840-acre tract in this field on which St. Regis owns an undivided one-quarter interest in the minerals, and Stanolind has six wells in commercial production of oil. On another tract in Alabama, in which St. Regis has an undivided one-half interest in the minerals and which leased to Sun Oil Co., exploration by seismograph and core drill crews is continuing. All indications are that large oil companies intend to explore the whole area thoroughly. Drilling for oil on St. Regis land in Santa Rosa County, Fla. has already been started through an agreement with the Texas Co.

Also announced by St. Regis is a contract with North Canadian Oils, Ltd. to participate in the financing and building of a $30 million 300-ton bleached kraft pulp mill at Edson, Alberta to be managed by St. Regis.

Organized as a small newsprint company at Deferiet, N.Y. some 55 years ago, St. Regis Paper Co.'s diverse interests have made it an industry giant with a production record for last year of 486,000 tons of kraft paper and boards, 274,000 tons of printing and other publication papers, and volumes of shipping sacks and other products. It does not now make any newsprint. That it is now moving into the container field is a definite move toward greater integration.

See Trend Continuing In Board-to-Box Integration

According to investment and management counselors, a dozen or more such mergers are on the drawing boards right now. Hardly a boxmaker in the country, but has had multiple offers to sell. Faced with the trend to integration, many a converter is becoming anxious about his supply of container board. And with box-

making profits at a low point, he is seeking a sale that will bring a quick turn-over.

To use a familiar figure: his box-plant baby has reached the marrying-age, and he will receive an acceptable suitor with open arms, providing the union is a profitable one.

Looked for by industry and investment circles is a continuance of the trend which merged Seaboard Container with National Container Corp., Angelus Paperbox with Robert Gair Co., National Folding Box Co. with Federal Paperboard Co., Rosenthal Paper Co. with Alton Boxboard Co., et al. Also it is back of the proposed merger of Mengel Co., Louisville, Ky. with Container Corp. of Chicago.

Principal Paper & Paperboard Company Acquisitions 1953-54 Aimed at Converting Integration

Purchaser			Acquired
Alton Boxboard Co.	June	1954	Rosenthal Paper Co.
Canadian-International Paper Co.	Oct.	1954	Brown Corp. La Tugue affiliate Brown Co., N.H.
Container Corp.	Sept.	1954	Mengel Co.'s stock control
Continental Can Co.	Oct.	1954	American Paper Goods Co.
Continental Can Co.	Feb.	1953	Betner Co., Devon, Pa.
Cornell Paper Board Products Co.	Sept.	1954	National Carton Co.
Champion Paper & Fibre Co.	Oct.	1954	Midwest Bottle Cap Co.
Crown-Zellerbach Corp.	Feb.	1953	St. Helens Pulp & Paper Co.
Federal Paperboard Co.	Feb.	1954	National Folding Box Co.
Robert Gair Co.	Jan.	1954	Angelus Paperbox Co.
W. C. Hamilton & Sons	Feb.	1954	Michigan Paper Co.
Hinde & Dauche of Canada Ltd.	Aug.	1954	Corrugated Paper Co.
International Paper Co.	Sept.	1954	Smith Box Co.
Marathon Corp.	Jan.	1953	Northern Paper Mills
National Container Corp.	March	1954	Seaboard Container Corp.
National Gypsum Co.	April	1953	Smith Asbestos Products Inc.
Ohio Boxboard Co.	Sept.	1953	Valley Container, Inc.
Ohio Paper Co.	Sept.	1954	Southern Asphalt Roofing Co.
Pacific Paperboard Co.	Jan.	1954	Andre Paper Box Co. of Los Angeles
Publisher Paper Co.	Oct.	1954	Oregon City Mfg. Co.
Scott Paper Co.	July	1954	Detroit Sulphite P&P Co.
Scott Paper Co.	July	1954	Westminster Paper Co. Ltd.
Scott Paper Co.	Oct.	1954	Hollingsworth & Whitney Co.
St. Regis Paper Corp.	April	1954	Superior Paper Prod. Co.
Stockport Paper Co.	Sept.	1954	Warder Paper Box Co., Inc.
Stone Container Corp.	Feb.	1953	Artkraft Paper Products Co.
Strathmore Paper Co.	Nov.	1953	Keith Paper Co.
S. D. Warren Co.	March	1953	Central Paper Co., Inc.
West Virginia Pulp & Paper Co.	Nov.	1953	Hinde & Dauch Paper Co.

Container Corp. Integration

Now fortified with woodlands and timber-cutting rights on a combined total of 155,000 acres, Container Corp. is expanding its timber reserves by (1) its policy of cutting less than 10 percent of its requirements and purchasing the rest; (2) adding to its timberland resources through purchases and long-term leases; and (3) through the annual procedure of planting several million seedlings.

With net worth of $87.5 million, Container Corp. and its wholly-owned domestic subsidiaries of O. B. Andrew Co., California Container Co., and Sefton Fibre Can Co., draw pulpwood from the forest, straw from farms, waste paper from 7 divisions of Pioneer Paper Stock Co.; to supply 7 processing plants, 12 pulp and paperboard mills, and 25 converting plants which produce containers, cartons and fiber cans.

Through Carton Internacional, S.A., it has partially-owned affiliates in Colombia, Mexico and Venezuela.

Mengel Co., on the other hand, has no integrated source of supply for its 12 container plants; it buys corrugating medium and kraft liner board to supply its 12 container plants.

Since Container Corp. also produces shipping containers, there are elements of horizontal as well as vertical in the prospective merger that would make the Chicago producer an industry giant.

Crown-Zellerbach Empire

A leading example of industry giants is of course the Crown-Zellerbach Corp. with its fully-integrated strength from its seven U.S. mills, its two Canadian affiliates, and the five mills of Fibre Board Products, Inc. division, producing a daily total of some 4,550 daily tons of newsprint, printing publication papers, wrapping and tissues, and paperboard. Output for the last fiscal year was reported at 1,058,809 tons of paper and board. The company also sold to the market 10,144 tons of wood pulp.

With net worth reported at $315,776,552 for the fiscal year ended April 30, 1954, the San Francisco corporation "owns in fee or controls under various forms of tenure approximately 920,000 acres of timberlands in British Columbia; in Washington and Oregon, own about 635,000 acres of forest land and long-term cutting rights on certain other tracts."

Through the acquisition of St. Helens Pulp & Paper Co., it now owns 10 U.S. paper converting plants, (1 in British Columbia) which supply a diverse list of bags, sulphite and kraft wrappers, shipping sacks, gummed tapes, napkins, toilet tissues and towels, to industry and the home. Its Western Waxed Paper Div. with two converting plants, produces in addition to other waxed wraps and packaging, foil laminates. Nine container plants of the Fibreboard Products division convert the output of its five board mills.

Wholly-owned U.S. subsidiaries are Crown Zellerbach Corp. of Texas, Crown Zellerbach Overseas Corp., International Pulpwood Supply Co., International Pulpwood Supply Co. Ltd., R. W. Burrows Co. Inc., Pacific Coast Supply Co., Waterway Terminals Co., Western Transportation Co., Zellerbach Paper Co.—the original paper jobbing establishment with its 10 branches through California.

Percentages of Paperboard Produced by Independent and Combined Companies 1952-1953

GRADE	CLASS	Percent 1952	1953
LINER			
	Combined	53.4	51.8
	Independent	46.6	48.2
	TOTAL	100.0	100.0
CORRUGATING MATERIAL			
	Combined	55.6	55.7
	Independent	44.4	44.3
	TOTAL	100.0	100.0
CHIP AND FILLER BOARD			
	Combined	86.9	86.4
	Independent	13.1	13.6
	TOTAL	100.0	100.0
FOLDING BOXBOARD			
	Combined	66.1	65.7
	Independent	33.9	34.3
	TOTAL	100.0	100.0

This table indicates, for example: that in 1953, 51.8% of the liner board production was by companies with major box plant consumption of their own.
A "Combined Mill" is one owning a box plant which consumes fifty percent or more of its production.
Source: National Paperboard Assn.

CENTRAL PAPER MILL of S. D. Warren currently being expanded to produce coated papers.

Through Crown-Zellerbach Canada, Ltd., the corporation owns 99 percent of several pulpwood, logging, pulp and paper, box, timber and towing companies in Canada of which St. Helens Pulp & Paper Co. is one.

Acquired by Crown Zellerbach in the Spring of 1953, the St. Helens purchase is being questioned by the Federal Trade Commission because it also makes and converts tissue products for the consumer market in the same area. Arguing restraint of competition, FTC is scrutinizing this merger along with some 28 in 16 industries that are awaiting approval. According to Crown, there is no restraint of trade involved.

The Marathon-Northern Merger

Like the writer of the epistle to the Hebrews, the time would fail us were we to record all those who through faith subdued mountains of obstacles to develop vast corporations in the U.S. paper and board industry. Some of the most familiar names like Oxford, Warren and Mead have woods-to-paper and board integration but no converting operations excepting a coating mill.

Of these, the Mead Corp. with the board output at Macon and Rome, Ga. mills partially-owned by Inland Container Corp. is an outstanding prospect. Inland has six box plants; Mead has no converting operations but a coating mill.

Champion Paper & Fibre Co., Hamilton, Ohio, is another example of non-conversion. A major producer of bleached food board, it is however about to announce a deal with Midwest Bottle Cap Company of Belleville, Ind. Midwest makes hot drink cups, milk bottle caps and closures.

The Marathon growth cannot be glossed over. Acquisition of Northern Paper Mills during 1953 was rated by President John Stevens, Jr. as the biggest single event of the company's year.

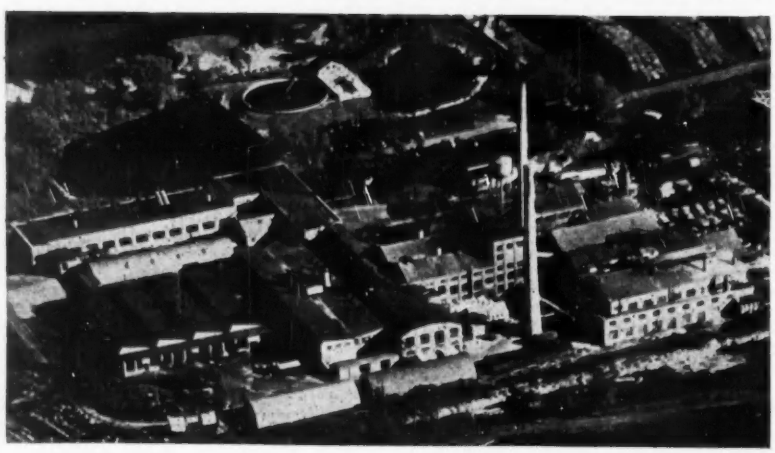
Integrated Board & Box Operations

	No. of Mills Supplying Own Container Plants	No. of Box & Container Plants
American Boxboard Co.	1	2
Bird & Son	1	1
Central Fibre Prod. Co.	5	2
Consolidated Paper Co.	4	4
Container Corp.	12	13
Continental Can Co.		
Hummel Ross Div.	1	2
Shellmar Div.		1
Cornell Paperboard Products	2	2
Consolidated Water Power & Paper	2	1
Federal Paperboard Co.	2	1
Flintkote Co.	2	1
Robert Gair Co.,		
New York	9	16
Canada	4	4
Gaylord Container Corp.	2	9
Gardner Board & Carton Co.	2	1
Inland Container Corp.	2 (partially-owned)	6
International Paper Co.	4 container bd. 4 bl. kraft bd.	11 container 8 single-service food
Kieckhefer Container Co.	2	10
Marathon Corp.	5	5
National Container Corp.	6	12
St. Regis Pulp & Paper (Superior Paper Prod. Div.)	1	1
Stone Container Corp.	2	2
Union Bag & Paper Corp.	4	1
United Board & Carton Co.	3	4
West Virginia Pulp & Paper Co. Hinde & Dauch Div.	2} 3}	12

Source: Lockwood's Directory, 1955 Edition.

The step provides for further integration, flexibility in manufacturing, and broader markets for Marathon Corp's line of fully converted paper and board products, more specifically its paper packaging. With net worth rated at $119 million, 9 mills and 8 converting plants, Marathon also produces its own supply of chlorine, caustic soda, sodium sulphide and hydrochloric acid and much of its needs of electric power, and transports pulp and raw materials to and from its mills by the Great Lakes freighter, D. C. Everett, named in honor of the chairman of the board.

The $152 million Kimberly-Clark Corp. with its five integrated woods-to-paper mills in the United States, the wholly-owned Longlac Pulp & Paper Co. Ltd. and Kimberly-Clark Corp. of Canada, Ltd., in Ontario, is a fair example of built-in conversion. Though claiming no separate converting plants but the Katzenbach & Warren wall-paper plant at New Canaan, Conn., Kimberly produces consumer household products—such as disposable dusters, silver polishing papers, barber towels and beauty pads for its own market as well as cel-



THILMANY MILL at Kaukauna produces a wider range of converted products than any other in the country.

Integration of Paper Production With Roofing Felts & Insulation Boards

	Paper & Board Mills	Converting Operations
Bird & Son, E. Walpole, Mass.	3	3
Barrett Div., Allied Chem. & Dye Corp.	5	2
Certain-Teed Products Corp.	7	7
Philip Carey Mfg. Co.	2	2
Celotex Corp.	4	3
Flintkote Co.	9	9
Johns-Manville Corp.	4	7
Kimberly-Clark Corp.	1	1 (Badger-Globe Div.)
Lehon Corp.	3	3
Ruberoid Co.	8	7
Volney Felt Mills, Inc.	11	12

lulose wadding and a full line of machine-coated book. A major portion of its cellulose wadding, facial tissue and table napkin stock is sold to a partially-owned company, International Cellucotton Products Co. Other associates are Coosa River Newsprint Co. and Spruce Falls Power & Paper Co.

Built-In Paper Conversion

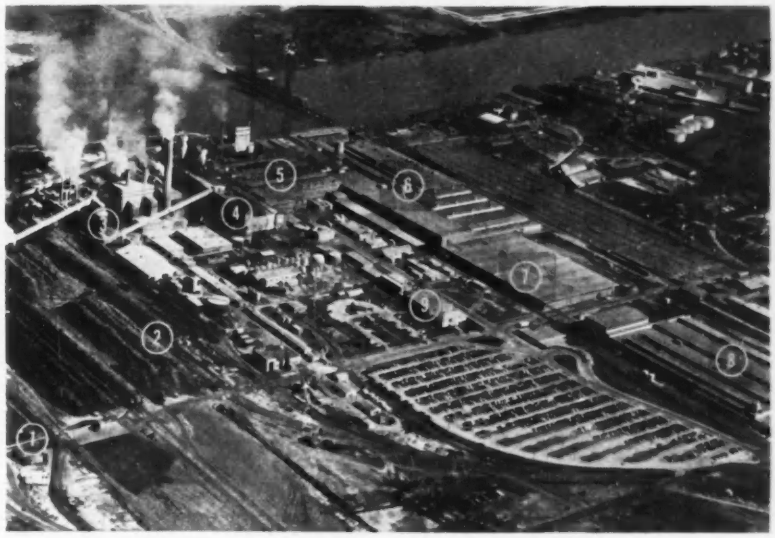
Like Kimberly-Clark, Scott, Hudson, Brown Co., Doeskin, Erving and other familiar names, at least a score of napkin, towel, and tissue producers do not indicate for Lockwood's Directory compilations that they are converters. Their cutting and boxing operations are apparently considered by them as a part of their paper manufacture.

The production of roofing felts and insulting boards, is very definitely a paper converting operation. The ten leading producers have close to 60 mills and 55 converting plants. (See table.)

Paper shipping sack and bag conversion is integrated with paper production by the largest manufacturers, as indicated in the table. Countless small ones are purely converters. Union Bag &

Coating, Laminating and Envelope Operations Integrated with Paper Mills

	Converting Operation
Champion-International Co., Lawrence, Mass.	Coating
Champion Paper & Fibre Co., Hamilton, Ohio	Laminates
Hammermill Paper Co., Erie, Pa.	Envelopes
Mead Corp., Chillicothe, Ohio	Coating
Oxford Paper Co., Rumford, Me.	Coating
Riegel Paper Corp., Milford, N. J.	Laminate, lacquer, emboss, protective packaging papers
St. Regis Paper Corp., Carthage, N. Y.	Plastic-coated specialties
S. D. Warren Co., Cumberland, Me.	Coating



WORLD'S LARGEST KRAFT PAPER MILL AND BAG PLANT of Union Bag & Paper Corp. at Savannah. Seen in this aerial view: 1) Southern leg of new woodyard flume, 2) chain conveyor line for direct handling of hardwood to barkers, 3) new chip storage silos, 4) new extension of digester building to accommodate six more kraft digesters and six semi-chemical digesters, 5) paper machine room, 6) bag mill, 7) new warehouse and shipping building, 8) box plant, 9) new administration building.

Paper Corp. with its new modern plant at Savannah, Ga. claims it is "the largest, most flexible and most completed integrated plant in the world manufacturing kraft pulp, board, paper and paper containers." Now an $80 million corporation, Union has woods-to-converted items integration with multiwall sacks and shipping containers leading in volume.

The Industry Leader, International Paper Co.

Rated Number 1 among paper and board producers by net worth, International Paper Co.'s $507 millions integrated activities produced 2,726,536 tons of unbleached container board; 328,077 tons of unbleached wrapping, bag and specialty papers; 621,028 tons of bleached papers and board; 223,063 tons of groundwood and specialty papers. U.S. production of dissolving and other pulps exceed 275,000 tons. Canada operations amounted to 1,000,000 tons additional. Conversion to shipping containers, milk containers, and miscellaneous products totaled 379,146 tons; grocery, multiwall and bags, 141,725 tons; insulating board 41,529 tons, plywood 14,694, for a total 1953 tonnage of 577,094 tons.

With an enviable record for forest management on its 17,956,463 acres of woodlands; a total of 10,182,000 seedling planted on Company lands during the 1952-53 season, International provided over 9 million seedlings to landowners in mill wood procurement areas.

Its most recent integration is with the Smith Box Co. of Manchester, N.H., which assumedly will become an adjunct of the Container Div. plant at the same point.

Integrated Paper & Bag Operations

Mill	No. of Kraft Paper Mills	No. of Paper Bag or Sack Plants
Bemis Bros. Bag. Co.	2	2
Continental Can Co.	1	1 Shellmar Div.
Chase Bag Co.	1	2
Gaylord Container Corp.	1	1
Gilman Paper Co.	2	1
Crown-Zellerbach Corp.	4	4
St. Helens Pulp & Paper Co.	3	1
Hudson Pulp and Paper		
International Pulp & Paper Co.	3	3
National Container Corp.	2	1
St. Regis Pulp & Paper Corp.	6	7 U. S.
Co.	1	1
Hollingsworth & Whitney Div. Scott Paper Co.	2	1
Union Bag & Paper Corp.	1	3

Mills Moved To Markets

To summarize, it can be seen that no conclusion of the wave of mergers is in sight. Economic factors, such as adjustments from the pulp paper and board expansions that followed the Korean War; the very high cost of freight; anxiety to be sure of continuing supply and market; all these are moving mills near to the consumer market. Integration of raw materials with converted product is a definite industry policy. The *Paper Trade* JOURNAL editors view it as a march to progress.

NEW DISPLAY DIVISION PLANT — In October, Gibraltar opened this new 50,000 square foot plant, devoted exclusively to the design and manufacture of corrugated point-of-purchase materials. Located in Clifton, N. J., the plant is the first complete industrial unit dedicated solely to this specialty.

Gibraltar Becomes A Leader in Corrugated Display Development

A Paper Trade JOURNAL Report

Nowadays, Gibraltar Corrugated Paper Co. hires artists and advertising idea men, because it has found that the talent of these men is carrying the company to the forefront of the point-of-purchase display business.

From a small beginning three years ago, the Display Division of Gibraltar Corrugated Paper Co. has outgrown its first location in a far corner of the sprawling box plant in North Bergen, N. J. and has now moved into a home of its own. A brand new and completely separate Display Division plant has been erected in Clifton, N. J. It combines under one roof virtually all the equipment and personnel necessary for the design and construction of corrugated point-of-sale displays. Full scale production of displays has been underway at the new plant for two months. Never before has a separate and entire plant been given over wholly to this specialized segment of the corrugated board industry.

The establishment of the plant is a natural outgrowth of Gibraltar's rather spectacular success in the display business. In a very short time, men of special talent at Gibraltar have lifted the manufacture of corrugated displays to a point of high achievement in commercial art.

S. Paul Boochever, Vice-President in charge of Display Division

Considerable vision and imagination have gone into this accomplishment, as well as remarkable technical advancements in developing new materials for construction of the displays.

How It Began

Gibraltar has been making paperboard and corrugated boxes for 40 years. Sometimes the corrugated containers would be printed but invariably only in one color with flat inks and against the drab background of the natural kraft liner. The printing was seldom intended to draw attention to the contents of the container even when the container was used to dispense the product in retail markets. In those days, a corrugated point-of-purchase display consisted mainly of the open kraft container to which a lithographed poster was attached.

The idea that corrugated board might be printed in multicolors with high-gloss inks and thus become brilliant advertising media as well as product dispensers was first broached to Gibraltar by a lithography expert, S. Paul Boochever of the Einson-Freeman Co. As the time came to transform this idea into action, Gibraltar hired Mr. Boochever as vice-president in charge of the new display division.

From the very beginning, Boochever visualized display stands that would attract not only through colorful printing, but through new and imaginative shapes artistically designed to complement the product being sold.

Specialists Needed

Personnel with artistic talent and high manual skills were needed to develop designs and construct patterns for these revolutionary displays. In three years, Gibraltar's creative department has grown to 15 men, including artists, construction men, and platemakers.

Employees of the display division now total 150. Among them are salesmen who must possess an imaginative flair as well as salesmanship. The process of creating new displays is facilitated by the firm's internal organization. Each salesman works with his own secretary, design director, and art director. The team system insures continuity of effort from the time a project is born until the production pattern for the approved display is turned over to the printers.

New Materials Needed

Gibraltar's display specialists were aware from the start that multicolor high-gloss printing of corrugated liner stock was next to impossible with existing materials, so they set about developing materials that would do the job.

Working with ink manufacturers, they perfected the very special high-gloss inks that are now registered under the trade mark Varnicolor. To improve the printability of the liner stock, Gibraltar perfected a series of bright white and colored coatings that could be applied to the board economically.

To print and die cut the large sheets required for floor displays, the company purchased the equipment of the River Raisin Co. display division. This and additional equipment is now installed in the new plant and still larger equipment is on order.

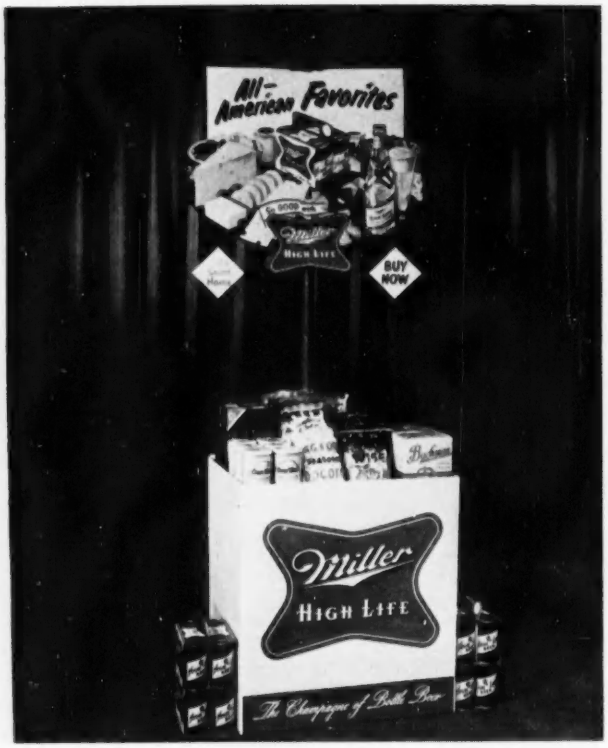
All presses have been modified to accomplish smooth rubber-plate printing of the corrugated stock. Using two passes through the press, the printers can turn out 8-color jobs with a bright "coated stock" finish that is said to have been impossible to achieve heretofore.

Gibraltar personnel have also modified

This baby powder floor stand with center pole and copy panel was rubber plate printed with high gloss Varnicolor inks in light and dark blue on white corrugated board. Copy panel supplied by Snyder & Black.

An appeal to associate the purchase of gin with a particular gin drink is carried out in the nautical design of this display merchandiser. It was produced on blonde wood grain board and printed with high gloss ink. Lithography by Einson-Freeman.

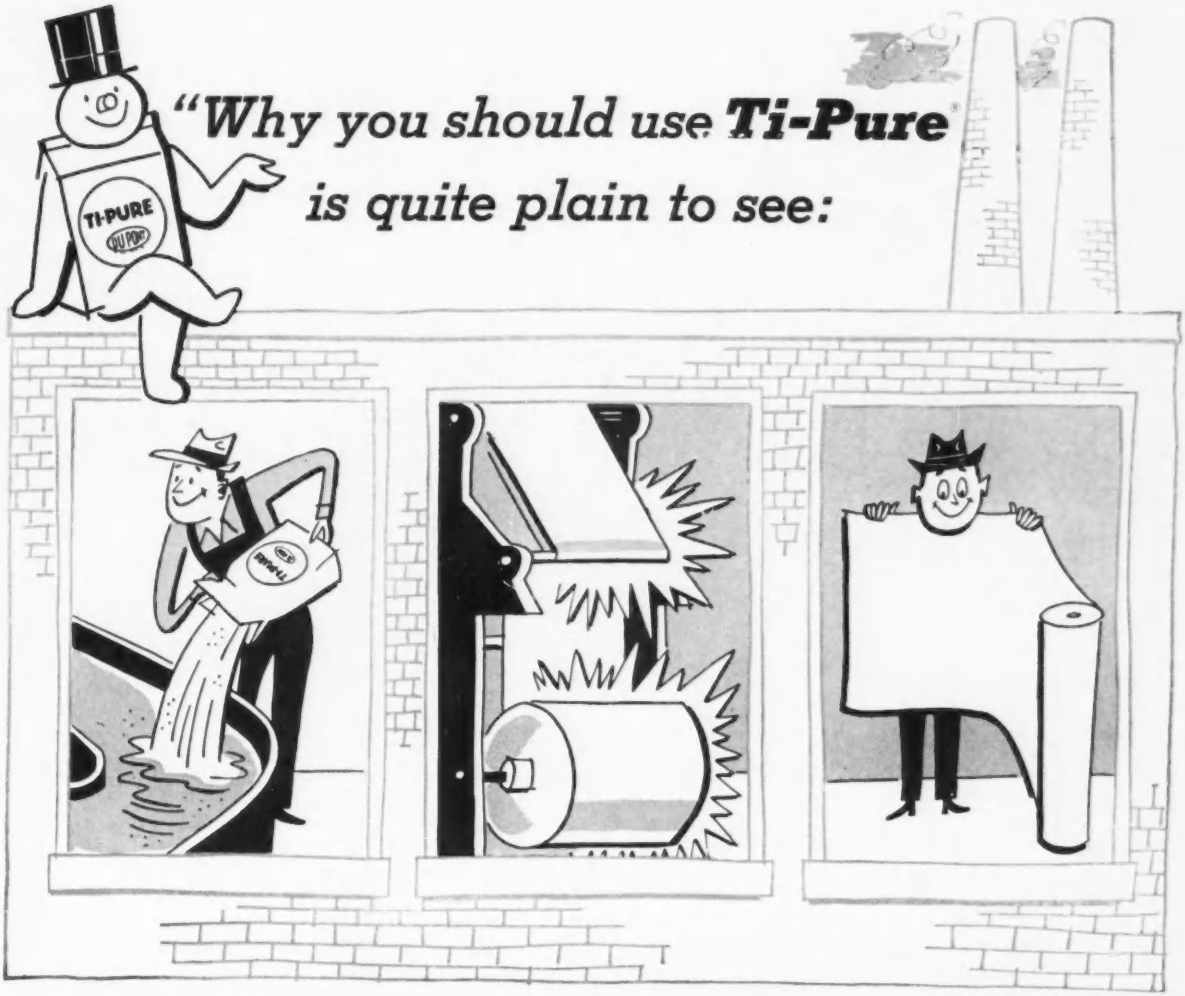
Four quarter round floor stands form this full round display. Quarter sections can also be used separately or as half rounds. High gloss printing is on super white board. A prize winner, this display uses copy panel by Snyder & Black.



Designed to sell multiple items related to the purchase of beer, this stack bin contains cheese, popcorn, crackers, etc. It is printed in black and red high gloss Varnicolor inks on white corrugated board. Litho copy panel supplied by Snyder & Black.

A replica of the Nescafe instant coffee jar, this display was constructed in full-round dimension. It is engineered to hold 48 jumbled two ounce jars of the product. Printing is high gloss in four colors — red, brown, yellow, and tan — on white corrugated board.

Convertible from Santa Claus to Howdy Doody, the copy panel for this red brick floor stand can be spun to bring lower Howdy-Doody half into place when seasonal change warrants it. The super white coated stand was printed in bright red, maroon, black, and gray. Panel by Kindred McLean.



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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

E. I. DU PONT DE NEMOURS & CO. (INC.), PIGMENTS DEPARTMENT, WILMINGTON 98, DELAWARE

SAFE ARRIVAL at many retail outlets is insured for this display shipper by designing it for rugged handling. The display is printed in red and blue Varnicolor inks on white corrugated board. Inserting full instructions for setting up and careful labelling of the outer box are standard procedures for Gibraltar displays.

the standard finishing and packaging equipment to accomplish special tasks. Much research and experiment have been conducted to produce the right kind of adhesive to attach standards, extra flaps, etc., to the basic display shapes.

Production Efficiency

The blanks of corrugated board are coated and cut to specification in Gibraltar's paper mill and box plant in North Bergen. They are then trucked to the Clifton plant where the entire job of converting them to displays is carried out.

Approved orders are put into production immediately. The plant operations are laid out roughly in a spiral pattern so that finished work feeds into the middle of the production department where each display is separately packaged. Care is taken to design displays for quick and simple assembly at point of use. The outer containers, in which they are shipped, are clearly labelled with complete handling instructions.

The plant has spacious storage areas and a wide truck-loading dock to accommodate shipments in or out. In the near future a railroad siding will add to the versatility of the shipping facilities.

Mr. Boochever feels that operations now are well enough coordinated to permit rush production of a complete order from first designs to final shipment, within a week.

Delivery of orders varies according to job requirements. Some displays go directly to the product manufacturer, some to distributors and some directly to point of purchase. If the display will utilize lithographed poster art as extra dressing, it is jobbed out by Gibraltar, received in Clifton and included in the complete package. Other special accessories are handled in the same way.

Process of Display Creation

Gibraltar men insist that creativity of design is as much a factor of success in these displays as the technical excellence of their construction. They explain that the display must do more than catch the customer's eye, it must also open his mind and make him receptive to buying the product.

Therefore, the designers and idea men collaborate on a variety of sketches and rough models to solve a customer's problem. Often the display men, without having any specific assignment, will work up a merchandising idea for a manufacturer who is a potential customer merely.

Some of the accompanying photographs illustrate the sale appeals that are designed into the displays: colorful printing of sales pitch, development of a motif (such as a pie wagon to sell pie mix), display of associated products (such as rice and tomato sauce), a large replica of packaged product (such as a display in form of large jar of instant coffee).

Corrugated Salesmen

Gibraltar can supply countless reports of the sales punch that a well-designed display can deliver. One of the firm's slogans goes: "Gibraltar MD's (Merchandising Displays) don't just show it; Gibraltar MD's sell it."

A typical case history cites a rise in weekly sales of crackers from 24 packages before display to 194 packages during display for an increase of 808 per cent.

"Spectaculars" Are Coming

So far the average corrugated display has been held down in height to somewhere near a man's eye level. But now that displays of modest proportions are numerous and vying among themselves in the average supermarket, Mr. Boochever predicts the need for a super display or "spectacular" as the trade has it. Already Gibraltar has a number of spectaculars ready for the production line.

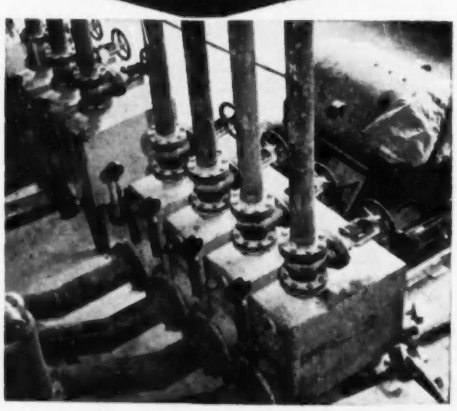
Spectaculars are displays that will tower 15 or more feet in the air and surely interrupt the customer's gage as he peers down the long reaches of the supermarket of tomorrow.

WALWORTH VALVES on the job in the pulp and paper industry

Shown below are Walworth 4-inch Iron Body Wedge Gate Valves on suction box vacuum piping in a southern pulp and paper mill.* In addition to these general service valves, and Walseal Valves and Fittings featured on the facing page, Walworth manufactures pulp stock valves, corrosion-resistant valves, and high pressure valves and fittings for use in the pulp and paper industry.

Walworth representatives are well qualified to help you with any valve or piping problem you may have in the manufacture of pulp or paper. Contact your Walworth Distributor, or write: Walworth Company, General Offices, 60 East 42nd Street, New York 17, N.Y.

*Name on request



WALWORTH

WALSEAL® VALVES AND FITTINGS

Better because . . . **There's no guesswork when a silver-brazed joint is made with a Walseal fitting. Sil-Fos alloy, which appears as a fillet at the face of a Walseal joint, comes from rings which have been factory-inserted in the end connections of Walseal fittings. The bright silver alloy fillet that you can see assures full penetration of alloy for a permanently leakproof joint.**

Cutaway view of a Walseal Tee showing: factory-inserted ring of silver brazing alloy; fillet of silver brazing alloy that appears upon completion of Walseal joint; cutaway view of the completed joint showing that silver brazing alloy has flowed in both directions from the factory-inserted ring.

Walseal is a registered trade mark which identifies valves and fittings manufactured by the Walworth Company. Walseal products have factory-inserted rings of silver brazing alloy in threadless ports. Walseal joints can be made only with Walseal valves and fittings.

If you're piping water, oil, steam, air, oxygen, nitrogen, helium or other industrial gases or refrigerants through brass, copper, or copper-nickel pipe, you'll want to investigate Walseal — available in complete lines of valves and fittings in four distinct pressure ranges — from 0 to 5000 psi. working pressure*. Your copy of Circular 115 will be sent on request . . . see your near-by Walworth Distributor today, or write to: Walworth Company, General Offices, 60 East 42nd Street, New York 17, N. Y.

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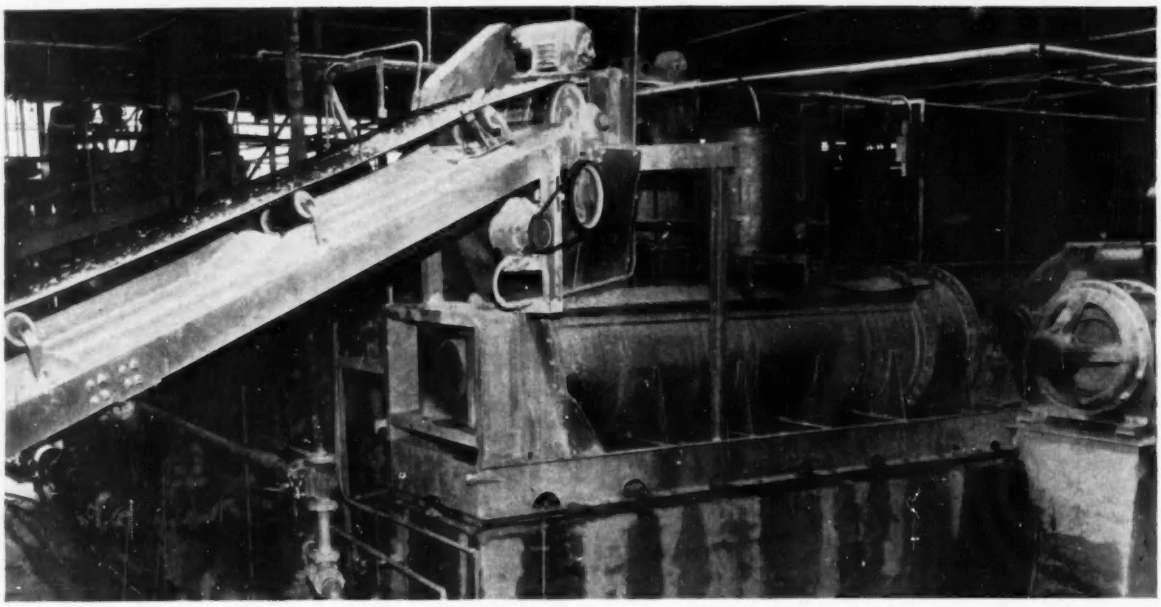
DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD



Huge pugmill in unique Huber patented process breaks down clay particles into smaller sizes, reducing viscosity of clay-water mixture. This process simplifies the control of paper coating operations.

Revolutionary Research Development by Huber's Clay Division Transforms Clay Particles to Control Clay Viscosity

VISCONTROL *The Unique Patented Process for the Control of Coating Clay Viscosity*

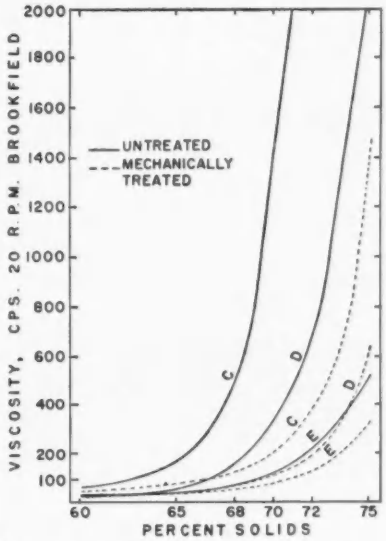
NEW YORK, N. Y.... Reports from the paper industry indicate that the method for controlling clay viscosity developed by J. M. Huber Corporation is highly successful and has significantly reduced the problems associated with modern high speed coating operations. The method, which mechanically alters the size of clay particles, was first described in a paper entitled "Viscosity Control of Concentrated Clay Suspensions" by N. Millman, technical director of Huber's Clay Division. It was published in "Paper Trade Journal," Feb. 16, 1951, and has now been thoroughly field tested.

What Controlled Viscosity Does—Using clays of controlled viscosity simplifies mill operation for the paper maker. Faster and more uniform production result. Fewer machine and formulation adjustments are needed to obtain uniform drying. Quality control problems on the finished coated sheets are reduced. And the finished sheet tends to yield a better printing job with respect to waviness and other spread and levelling complications. To show how closely J. M. Huber is able to control clay viscosity within specified ranges, car-by-car checks were kept on 100 carloads shipped to one manufacturer. Ninety-six cars fell within the 145-195 cps (Brookfield, 70% solids, 20 rpm) range. A second mill with other requirements reports that of 60 carload shipments, 58 fell within 105-125 cps.

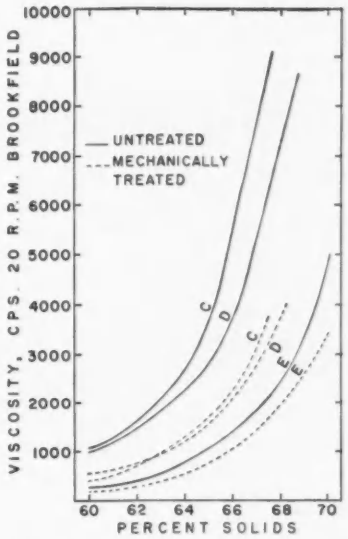
Background—To understand how the new Huber process works, it is first necessary to examine briefly the nature of the problem. The behavior of concentrated clay coating mixtures during their preparation within a plant and during their subsequent application to the surface of a rapidly moving paper web, depends considerably on the flow characteristics of the clay. Hence clay producers strive to produce a clay of definite and uniform viscosity properties.

Previous to Huber's discovery, this uniformity could be achieved in a limited fashion only through the careful selection of desirable crude clays. This process is difficult and costly due to wide differences in the flow characteristics of crude clays even from the same deposit. Hence J. M. Huber decided to concentrate its research efforts for clay uniformity on methods that would alter the inherent properties of the crude clay.

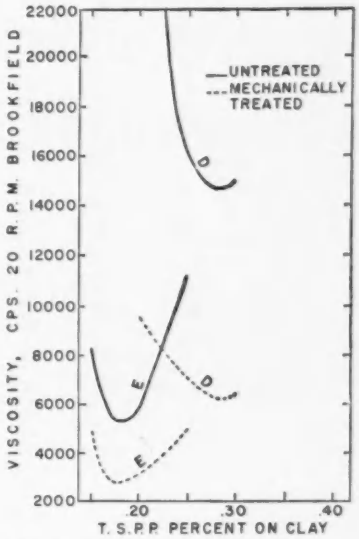
Industry Requirements—Machine coating of paper by modern methods generally requires coating colors of high



Viscosity of treated and untreated clays in deflocculated clay-water suspensions. Treatment in all cases shown was in the Huber pugmill.



Viscosity of treated and untreated clays in starch coating colors. The starch was converted and blended with the dispersed mixture.



Viscosity of treated and untreated clays in coating colors prepared by converting starch in the presence of clay.

solids content. Frequently clay-water suspensions containing as high as 72 per cent clay are required to flow freely through relatively fine screens. Also, coating colors in some cases containing in excess of 65 per cent total solids, must be of a character which will permit spreading at coating machine speeds and levelling after application to the paper surface. Sometimes the clay acts as a limiting factor because of the high viscosity it imparts to coating mixtures.

What Affects Viscosity?—Particle size alone does not determine the viscosity of a clay suspension. The lowest viscosity clays are those whose structural arrangement of particle size and particle shape is such as to produce the least impediment to particle rotation in a relatively small volume of liquid.

The shape of the clay particle has a controlling influence on the viscosity of the suspension. Particles suspended in a flowing liquid are rotated because of the unequal velocity of the flow planes on each side of the particle. If the particles become too crowded they interfere with free rotation and the flow is retarded. For free rotation Huber researchers found that the particle should be suspended in a sphere of liquid which would enclose the particle. If the particle is spherical, the volume required for free rotation would be that of the particle itself. If the particle is needle shaped, the volume of liquid required would be a sphere the diameter of which is equal to the length of the needle. The more the shape of the clay particle departs from that of a sphere, the greater the volume of liquid required for free rotation in proportion to the volume of solid of the particle. It follows then that any change in the shape of clay particles caused by breaking across needle or plate-like crystals, while increasing fineness, might be expected to produce a reduction in viscosity of highly concentrated suspensions.

How It Is Done—The most practical method of breaking up the clay particles consists of mechanically working a crude clay body of putty-like consistency. The mixing should be sufficiently rapid so that the plates are broken as they interfere in passing in adjacent slip streams. This action produces clay of increased fineness composed of particles having a greater ratio of thickness to length and, at the same time, tends to produce a closer packed mixture of different sized particles.

The process is carried on by J. M. Huber in a continuous manner with a strongly constructed pugmill into which the proper amounts of crude clay, water and deflocculent are fed. Such equipment operating at about 30 h. p. hours per ton of clay will produce a marked decrease in the inherent viscosity of the clay in concentrated clay suspensions. After pugmill treatment, the crude clay can be diluted and subjected to various methods of fractionation to effect the separation of clays of varying particle fineness. Comparative viscosity of treated and untreated clays are shown in the figures. Working samples of controlled viscosity clays are available from J. M. Huber Corp., 100 Park Ave., N. Y. 17, N. Y.

J. M. HUBER CORPORATION, 100 PARK AVENUE, NEW YORK 17, N. Y.

One of the World's Largest Clay Producers

HUBER

How the New Stevens Counter Performs at Beckett Paper

The Beckett Paper Co., Hamilton, Ohio, are enthusiastic about the latest air operated model of the Stevens automatic counter installed on their cutters. The new counter has only been out about three months.

William Riegers, superintendent of finishing at Beckett, said the new model is practically foolproof. At present the company is using three new models and two old. Mr. Riegers said the new models have cut maintenance time and costs to zero.

Beckett installed its first Stevens counter in the spring of 1951 and according to Riegers and George Lydick, chief engineer, the true sheet count per ream jumped immediately from about thirty to forty percent accuracy by hand counting to about seventy percent accuracy with the automatic machine.

Beckett Paper Co., in conjunction with Stevens, did some research on the counter and developed the vertical and horizontal idea on this earlier model. This counter is still in use and compares quite favorably to the new air operated model. The old type was operated by an electric solenoid.

Mr. Riegers said the counter gradually showed improvement until it was operating at 80 to 85 percent automatic count and that the new model has been registering a 90 to 95 percent average.

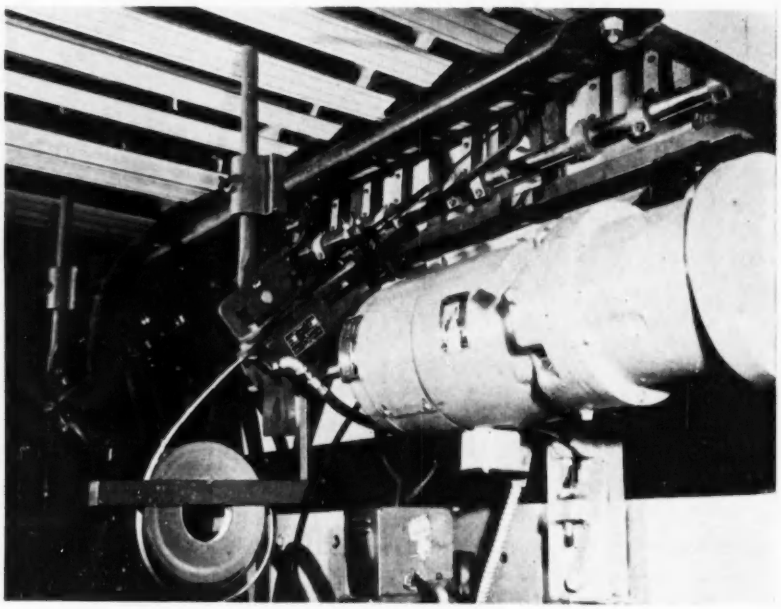
A number of advantages are cited for the Stevens device: For one thing, Mr. Riegers said the counter is the easiest possible one to set when adding or substracting the count.

The counter injects the count slips in such a manner that it is practically foolproof and only a slip by the operator of the cutting machine could cause minor difficulty.

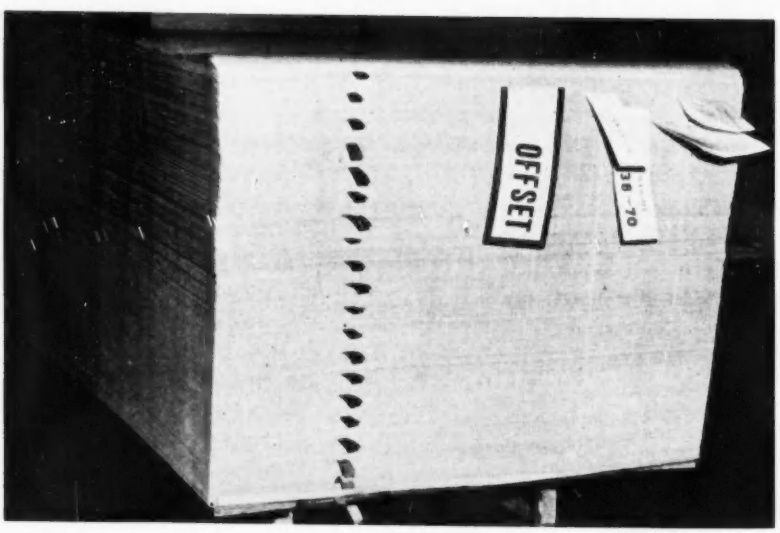
At present, the company is using three of the new air operated units and two electric units and has two extra counters for replacement.

The old electric counters are mounted along the side of the cutters and inject from the side and are mounted exactly parallel to the paper's edge. The new air operated counters are mounted under the machine at an angle and eject through a long snout into the back of the paper stack. The old models are more open to view and the tabs can be seen as they are inserted. The new model does not allow for viewing the tabs as they are inserted but according to Mr. Riegers the counter is so foolproof that it is not necessary to view the operation.

Actually, the counter operation is very simple. The counter mechanism is set for the desired number of sheets, as this number is reached the solenoid is activated and a tab is shot out to mark the count. After a short delay the tab is cut off and the weight of the paper carries the tab downward with the pile.



NEW STEVENS COUNTER with long snout shown on one of the cutting machines at Beckett Paper Co., Hamilton, Ohio. The counter shown here is three months old and ejects the tape into the back of the stack of paper which can be seen slightly at the top right.



STACK OF PAPER after tape counters had been placed by the new Stevens counter.

COMPARE these Advantages...

4

1.....LONGER WIRE LIFE

2.....LESS DOWN TIME

3.....FASTER WIRE CHANGE

4.....BETTER WATER REMOVAL

THE MANCHESTER CANTILEVER TYPE SUCTION COUCH ROLL gives you these important advantages because it is engineered to meet your special requirements. Our engineers will recommend how to get more efficient water removal with the right suction box area and properly applied vacuum equipment.

A correct diameter couch roll provides more surface contact area, more uniform wire tension, and less friction between couch roll surface and wire. Result: longer wire life and reduced costly down time.

With Manchester's cantilever support, you can slip the wire loop over the couch roll, start it properly, and string the wire faster.

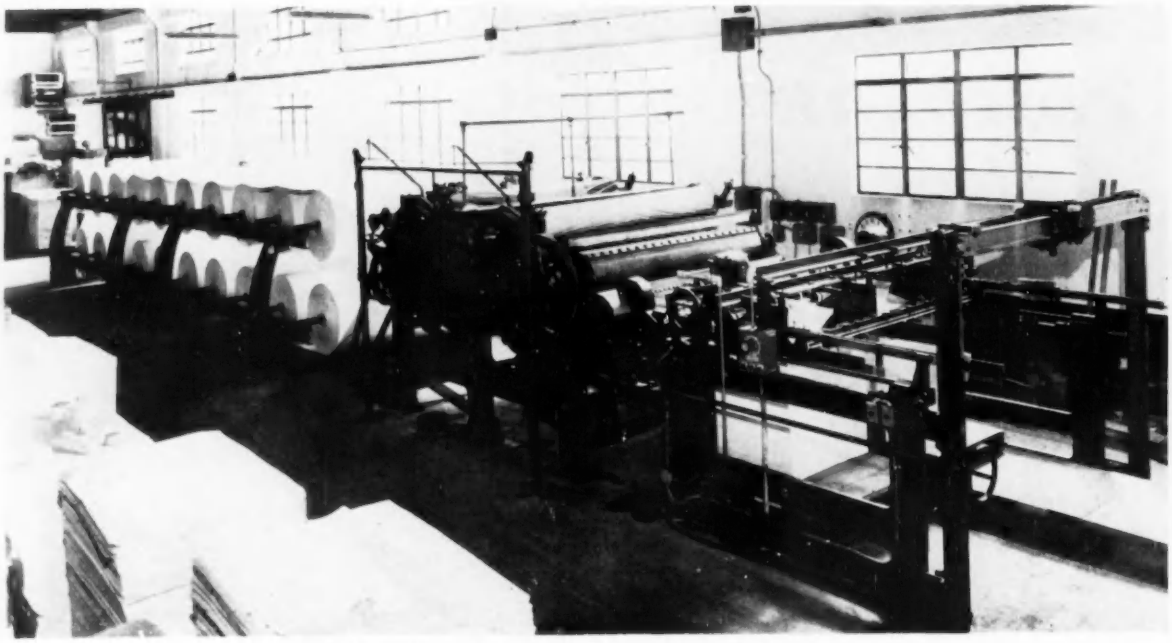
All these important features mean more production, greater profit for you. Write us for additional information.

OTHER PRODUCTS: Winders • Adjustable Shake Motion • Pope Type Reels • Paper Machine Drives • Size Presses • Rubber-Covered Drilled Suction Press Rolls • Drilled Suction Drum Rolls • Drilled Suction Couch Rolls • Cylinder Moulds • Smoothing Presses • Complete Fourdriniers

SPECIALISTS IN PAPER MILL MACHINERY AND COMPLETE REPAIR SERVICE

THE Manchester MACHINE COMPANY

1718 Central Avenue • Middletown, Ohio



Regular speed tandem delivery duplex cutter and lay-boy with counter and marker.

Converting Paper, Board, Pulp, Foil, Etc. Into Sheets

Joseph A. Clancy

Maxson Automatic Machinery Co.

During recent years there has been a marked increase in the study of ways and means of improving the converting of board, paper, pulp, foil, etc., in an effort to eliminate much of the manual labor formerly involved and at the same time to vastly improve the finished product and reduce wastage of valuable stocks. This is particularly evident in the field of producing sheets of various sizes.

Less labor is now involved and yet the daily tonnage of sheet production has been stepped up to double or more what it was a decade ago.

Some materials are cut from one web at a time and others from a multiple of webs simultaneously. Single web cutting is done where the stock comes right off the cylinder machine or from combiner-laminators and the like; and in the case of coated papers it is desirable to cut from a single web in order to insure a positive match of all sheets in the resultant piles.

Where board and pulp are cut into sheets as the web emerges from the machine, new pilers are available that stack the product continuously, i.e. without stopping the flow of sheets during the period of removing loads from the piler. On pulp, the platform in the piler is of conveyor design and the pulp is rammed forward to a traveling conveyor section over which it goes to the balers. This is all automatic and piles can be ejected by weight or height. Extending grid fingers hold the interim load of sheets until the empty platform raises itself to the point for the next full load and then these fingers retract automatically and leave the interim pile on the platform as the beginning of the new high pile-load. On board, the production of simplex and duplex cutters can be handled automatically and continuously and provision is made in such equipment for a switch controlled by solenoids that will divert the entire production of sheets to an auxiliary point during size-changes, etc., or can be operated so as to divert any one of the streams of sheets to either of two main piling stations or to "reject." The advantages in continuous-running piling of sheets are sustained operation of expensive cylinder and pulp machines and also the increase in operating speed due to mechanization of the piling.

On combiner-laminator work, the stock is sheeted and stacked continuously and thus none is wound into rolls so that curl is minimized and speeds of over 600 feet per minute have been maintained on work of this class.

Innovations in the types of roll stands

are the use of two roll stands on tracks so that one set can be loaded while the previously-loaded set is being emptied into the cutter. This keeps the cutter in more steady operation and produces more sheet tonnage than was possible when but one roll stand was used and the cutter was stopped while the one stand was being reloaded.

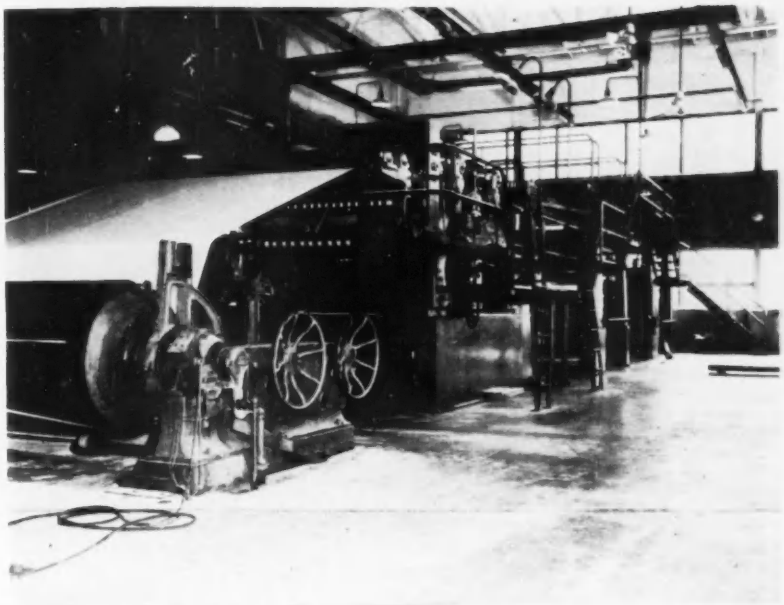
Improvements in cutters have been in the use of rubber-covered squeeze rolls to draw in the web stocks in place of the former spiral-felt-covered rolls — the use of antifriction bearings instead of babbitted bearings and some changes in knife design to provide an easier path for the paper or other material to pass through.

Once the material has been sheeted, the general method today is to overlap the sheets under the principles of the Mamco overlapping delivery tape system which allows high speed operation and yet reduces momentum of the packets of sheets to insure their being stacked without damage to their edges. When sheets were delivered in tandem fashion, i.e. with intervals of space between successive packets, operating speed was held down as the rate at which the packets would travel onto the pile platform would damage the product unless the machine were run slowly.

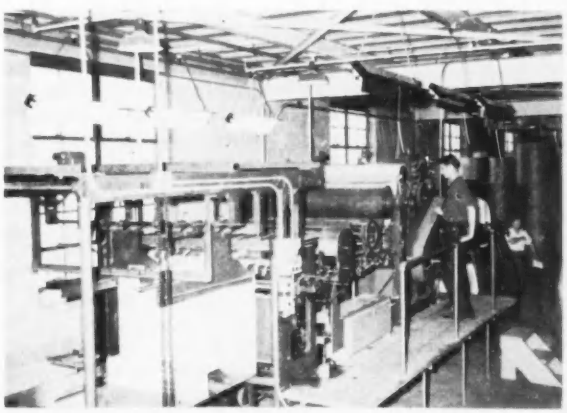
The continuous-running units previously referred to are available in either tandem or overlapping delivery design for use dependent upon the productive speed potentiality of the board machine, the laminator or the pulp machine.

Until very recently, for example, envelope manufacturers and box makers bought all of their sheet stocks but now they are installing equipment on which they can mount rolls and produce their own sheets. Some of them use the roll stand on tracks, others use just the one roll stand. They usually cut from six rolls at a time. Their speed ranges to 550 or more feet per minute. As the paper unwinds, each web passes through an individual "De-Curler" to flatten it for the next operation. It is then sheeted by the rotary cutter, overlapped for delivery to the lay-boy; counted mechanically; jogged automatically into even stacks usually 60 inches high; tagged automatically into reams; and treated to remove troublesome static. By doing their own sheeting, they find that their investment in inventory is less than when they tried to carry all basis weights and sizes of sheets in stock; and their inventory is much more flexible so that they can fill customers' orders quicker.

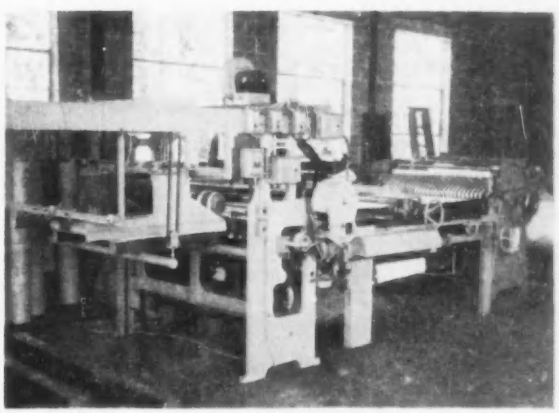
Foil converting, especially when the stock has been printed, is now done in two different ways. One way is to sheet the printed web stock to register at high speed as it comes off the rotogravure press. Another way is to wind the printed web and then cut-to-register at high speed from the roll. The overlapping delivery principle of handling foil has made high speeds possible due to the excellent control exercised over the sheets and the fact that an air current is introduced at two points along line of delivery—firstly at point of overlap and secondly as the overlapped stream flows onto the pile table. This air film buoys the sheets to prevent scratching the surfaces and also facilitates the jogging of such sensitive stocks into even stacks which are later guillotined into smaller sheet sizes without rejogging.



CONTINUOUS-RUNNING PILER handling board sheets from duplex cutter at end of cylinder machine.

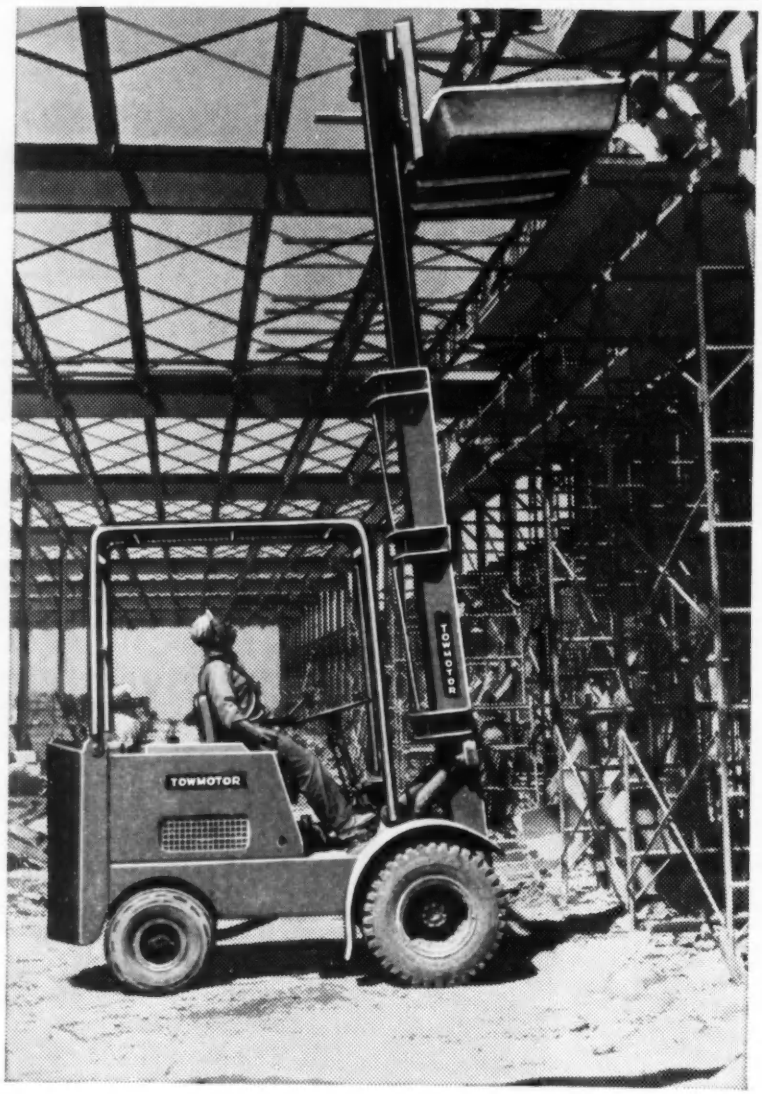


De-curling, sheeting, counting, overlapping, piling, ream-tagging and static eliminating unit.



Mechanization of inspection of sheets.

NEW IDEA



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Making light work of heavy lifting is Towmotor's job here . . . delivering a half ton of mortar to the work level in seconds. Your handling problem, inside or outside, can also be solved with Towmotor efficiency. Your nearby Towmotor representative is a materials handling specialist. Have him analyze your materials handling needs or write for special Job Studies covering *your industry*. TOWMOTOR CORPORATION, Div. 1711, 1226 E. 152nd St., Cleveland 10, Ohio.

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THE ONE-MAN-GANG
®

FORK LIFT TRUCKS and TRACTORS
Since 1919

Cut-to-register work is being done now at speeds of 200 sheets per minute or 500 feet per minute with tolerance of plus or minus 1/64" in sheet register. Electric eye devices keep the knife cutting in register with the printed target.

Lay-boys or pilers have been designed to permit removal of full loads from the front or from either side to meet the skid design of customers and to fit into limited floor space areas.

The climb in sheeting speeds started back in the days when Maxson Automatic Machinery Company, Westerly, R. I., introduced the "Mamco Overlapping Delivery" to replace accumulators on spot sheeters then used to cut printed waxed papers for bread wrappers. The use of the "Mamco Overlapping" spread to paper mills for all kinds of papers and from there to the board mills for use on cutters attached to cylinder machines. Later it became of value in handling pulp, foil, corrugated, impregnated materials and pasted products. As speed increased, mental-counting and hand-tagging of reams, quires and other sales divisions had to be replaced and the Mamco counter and marker came into use in hundreds of domestic and foreign mills and converting plants.

In the handling of corrugated sheet work, sheets as short as 1½" and as long as 144" have been delivered in overlapped relation at high speed right from the cutters on the end of the corrugators.

The modern methods of producing sheets are geared along the line of reduction of crew, better handling of sheets and the greatly stepped-up speeds of the various types of converting machines used in the sheet producing fields.

A new design of sheet inspection unit has been introduced which cuts from a single roll of paper at a time, underlaps each sheet, stops each sheet during period of inspection, and then either directs the sheet to a lay-boy for piling, jogging, counting and tagging or, at the will of the inspector, rejects a faulty sheet to an auxiliary piling station under the sorting area. In this type of machine, no one touches the sheets from the time the paper in roll form is mounted back of the cutter until the piles are removed from the lay-boy.

Fibreboard to Lease Kliklok Equipment

Fibreboard Products Inc., with head offices in San Francisco, Calif., announces that they have entered into a license agreement with the Kliklok Corp., New York, N. Y., which will give Fibreboard the right to sub-lease Kliklok box forming equipment and to supply cartons for use on Kliklok equipment.

Foreign Markets for Paper and Paperboard Containers

U. S. exporters of paper and paperboard containers have been selling more of their products abroad during the last three years than at any other period in history. The volume of sales for export in 1947 nearly doubled that of the previous year and remained fairly constant at between $11.5 and $13.8 million for the next three years. In 1951, foreign sales reached a peak of over $23.4 million, and they have been close to the $20 million mark ever since.

Export data for items in this category have been greatly improved over the last decade and a half.

Paper Shipping Sacks. Foreign sales of paper shipping sacks fluctuated considerably in the post war period. The Union of South Africa has been one of the more volatile markets. Exports to this country which amounted to $1,261,731 and $2,022,562 in 1947 and 1948, respectively, were nil in 1949. Sales to the Union of South Africa rose again to over half a million dollars in both 1951 and 1952, but fell off to $60,507 last year. The Philippine Republic has been and is currently the most important market, with Panama, Cuba, and the Dominican Republic figuring heavily in the 1953 export volume.

Grocery, Variety, and Household Bags. Figures for grocery and variety bags are available only for 1952 and 1953 when Canada, the Philippine, Dominican and Panamanian Republics, the Panama Canal Zone, and Cuba were the principal markets.

Specialty Bags. Four countries, Canada, Cuba, Venezuela, and the Philippines, were the destination points for 55.9 per cent and 61.7 per cent of the total value of United States exports of specialty bags in the years 1951 and 1952, respectively.

Corrugated and Solid Fibre Shipping Containers. Exports of corrugated and solid fibre shipping containers reached their highest dollar volume in 1951, increasing about 200 per cent over the previous year to $3,987,320. Foreign sales were off 11.9 per cent in 1952, and fell 4.5 per cent further in the following year; nevertheless, 1953 was the third highest year in history in terms of dollar volume. Canada was the principal importer in 1953, with Mexico, Venezuela, the Netherlands, the Philippines, and the Belgian Congo also buying substantial amounts.

Folding and Set-up Boxes. Folding and set-up boxes accounted for 20.8 per cent of the total United States exports of paper and paperboard containers in 1953. Foreign sales have been around the $4 million mark for the last three years. Canada, Mexico, Cuba, Venezuela, Iceland, the Philippines, and New Zealand have been the more important markets in recent years. Exports to Japan showed a significant increase to $256,309 in 1953 when the islands of Nippon ranked as the fifth largest market for United States manufacturers.

Sanitary Food Containers. More sanitary food containers were exported from the United States in 1953 than ever before. Foreign sales increased 31.4 per cent over the previous year in 1950, 46.9 per cent over 1950 in 1951, and 28.5 per cent over 1951 in 1952. The total of 1953 sales amounted to $6,268,929 which was 8.3 per cent above the 1952 volume. Venezuela has been by far the most important single market. Over half of all United States exports of sanitary food containers in each of the last 5 years has been destined for Venezuelan shores. Japan and Cuba are other large consumers, each country buying between four and five hundred thousand dollars worth in both 1952 and 1953.

Taking paper and paperboard containers as a whole, the most significant markets in recent years have been Canada and Venezuela, with the Philippines, Cuba, and Mexico also playing important parts in the export picture. This picture has been fairly bright as indicated by the high level of sales in recent years shown in the table.

Containers and Packaging Industry Report U. S. Dept. of Commerce, Vol. VII, No. 3, Autumn 1954.

Value of United States Exports of Paper and Paperboard Containers, 1938, 1939, 1946-53

[Thousands of dollars]

Country of destination	1938	1939	1946	1947	1948	1949	1950	1951	1952	1953
Venezuela	72	124	224	529	796	2,327	2,691	4,116	4,848	4,666
Canada	590	705	1,687	1,842	1,061	1,494	1,800	2,823	3,099	4,297
Philippines	214	548	362	1,716	2,327	2,468	1,828	3,631	2,143	1,725
Cuba	105	155	505	751	716	708	935	1,234	1,445	1,230
Mexico	31	92	675	606	383	477	698	1,433	1,046	1,173
Panama	54	60	167	251	264	375	472	671	737	718
Dominican Republic	49	27	144	127	396	205	270	511	592	506
Japan	(*)	(*)	(*)	(*)	494	313	354	693	640	435
Netherlands	13	21	8	76	76	77	102	222	287	321
Guatemala	5	5	49	90	149	163	133	229	179	225
Other countries	724	508	2,235	6,920	7,043	2,927	3,123	7,857	5,276	3,438
Total	1,857	2,245	6,506	12,908	13,705	11,534	12,406	23,420	20,292	18,734

*Less than $500.

Source: Bureau of the Census.

How a Philadelphia Converter Licked a Monoxide Problem

Cellulose Paper Converting Co., Philadelphia, Pa., has cured a lot of employees' headaches—literally as well as figuratively—by equipping its gasoline-powered fork lift truck with an OCM catalytic exhaust.

The firm's expanding business in paper roll products — it makes business machine rolls, teletype rolls, shelf paper, freezer wraps and similar products sold under the Cellupak trade name — had forced the owners to seek larger manufacturing and storage space. They leased a one-story building with 20,000 square feet at Columbia Ave. and North American St. in Philadelphia and found that it was well laid out for powered fork-truck handling of large paper rolls and palletized cartons of finished products. In its old plant, the company had used hand trucks and electric stackers for handling materials.

Gas Truck Chosen

When it moved into its new plant and modernized its materials handling operations, Cellulose & Paper Converting Co. bought a Towmotor Model 420 lift truck with 4000-pound capacity and 10-foot lift. Plant executives favored a gasoline-powered truck because of initial cost advantage and because it could be kept operating continuously without the need to charge batteries.

However, gas fumes from the truck tended to concentrate because of insufficient ventilation in the plant, and soon there were numerous complaints about sick headaches in areas where the truck operated.

The problem was referred to the Camden, N. J., dealer who had sold the truck to Cellulose & Paper Converting Co. The dealer recommended installation of an OCM catalytic exhaust, manufactured by Oxy-Catalyst, Inc., Wayne, Pa., to remove the carbon monoxide and other noxious gases which were contaminating the atmosphere.

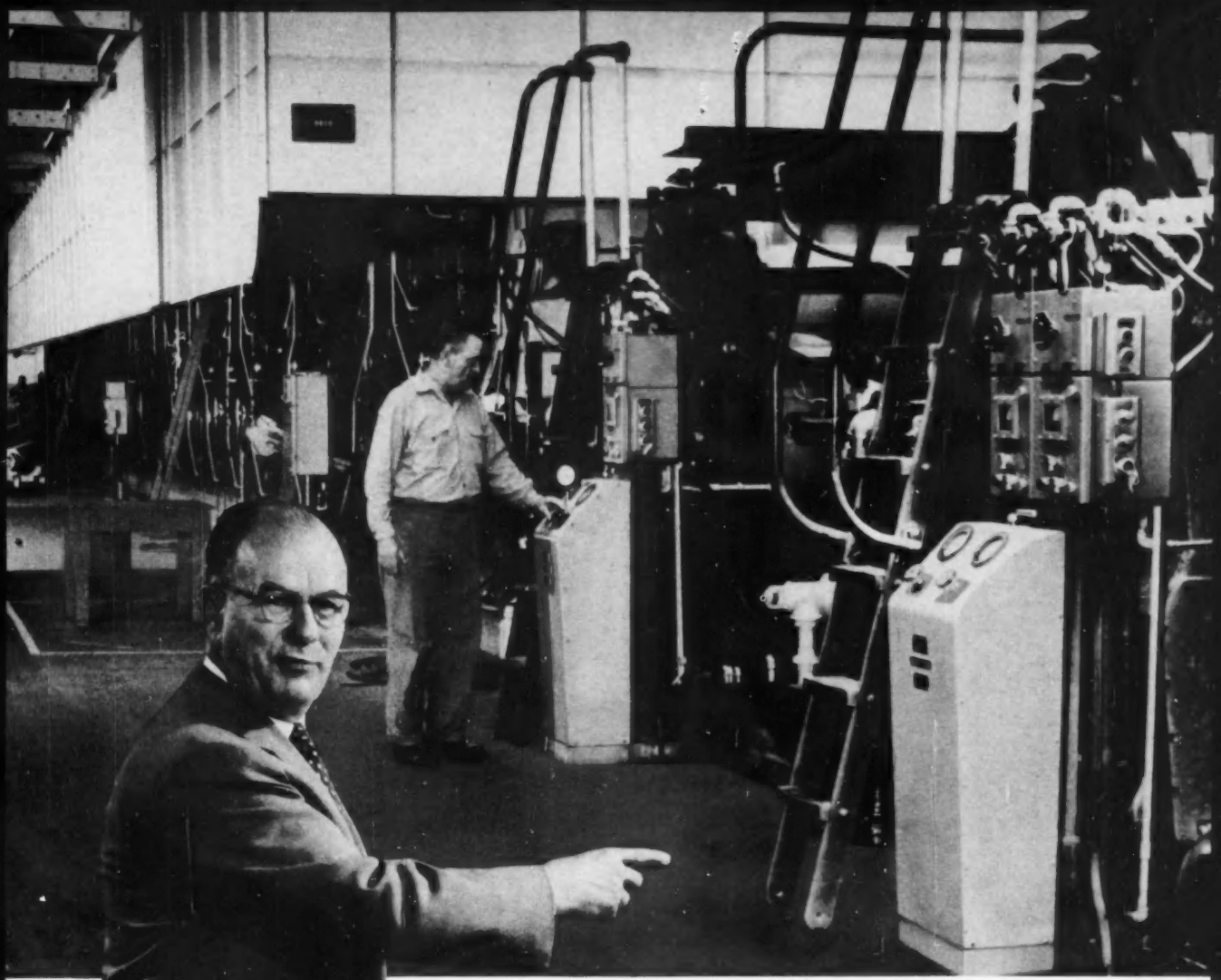
Alan Isen, treasurer and general manager of Cellulose & Paper, felt this would be a worthwhile investment in terms of employee safety and comfort, and authorized the dealer to equip the truck with an OCM catalytic exhaust.

According to report, results were immediately apparent. Although the truck is operated indoors continuously for six hours each day, there have been no perceptible effects on the workmen from the engine exhaust. Complaints of headaches disappeared completely, it is said.

The basic unit of the catalytic exhaust is a cartridge of spaced porcelain rods coated with a catalytic agent (catalytic alumina and platinum alloy). As the engine exhaust flows across the surface of these rods, carbon monoxide and other noxious vapors are oxidized to harmless effluents, mostly carbon dioxide and water vapor. The slight trace of contaminants remaining is said to be far below the minimum tolerance of the U. S. Public Health Service.

The OCM catalytic exhaust (see arrow in illustration) uses two or more Oxycat cartridges, depending upon the cubic-inch displacement of the engine. It can be used on any engine — mobile or stationary — which burns unleaded gasoline, and it can be easily adapted to LP gas engines. A catalytic unit of the same principle is available also for 4-cycle diesel engines.

The units can be installed by a mechanic or by the truck dealer. Space requirements are approximately the same as for the regular muffler which it replaces.



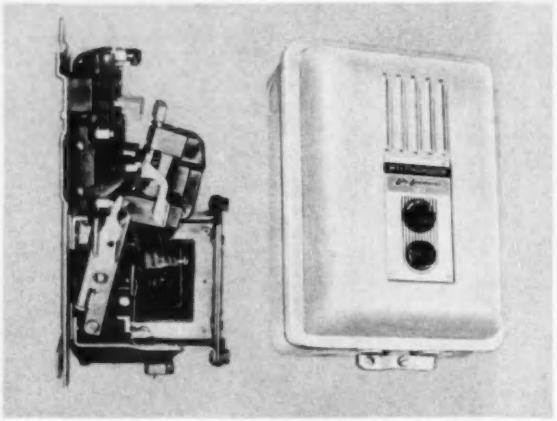
R. R. Baker
Paper Industry Engineer
Westinghouse Industrial Sales

Westinghouse builds apparatus for 7-day weeks

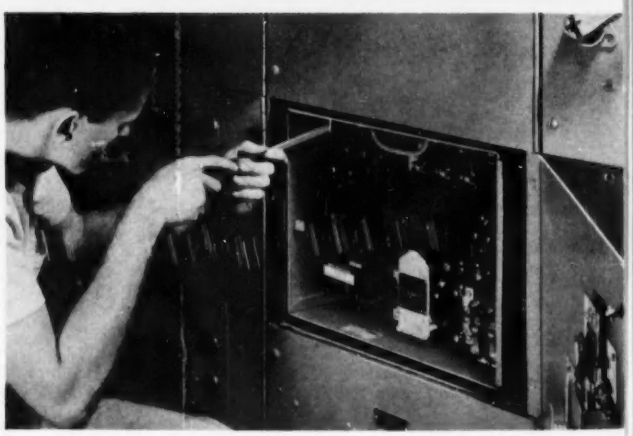
To drive and control machinery in a mill that's running 24 hours a day, seven days a week, you need electrical and mechanical equipment built to withstand a paper mill's tough operating conditions. Westinghouse builds this kind of equipment. Look it over on the next three pages.

YOU CAN BE SURE... IF IT'S Westinghouse

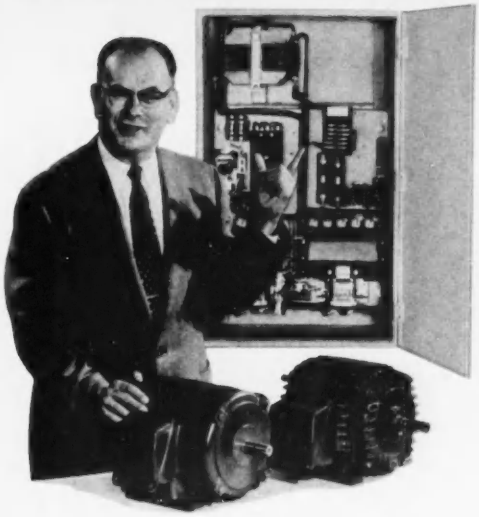
Supercalender drive provides the accuracy of control at all speeds to maintain a perfect finish on the photographic paper being run off. Both unwind and wind-up are electrified by Westinghouse.



Life-Line Starters have only one moving element for the make-break cycle. Action is seesaw, balanced on a knife-edge bearing. Kickout spring provides contact-opening force.



Westinghouse Control Centers mean easy maintenance. With only a screw driver, all wiring rearrangement and installation can be done quickly and easily through front openings.



Westinghouse motors and controls fight off moisture and dirt

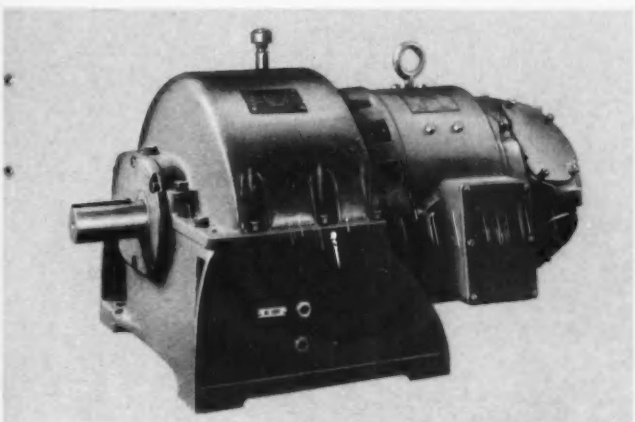
Bearing failure means motor failure, and the main causes of bearing failure are dust, dirt and moisture. But these troublemaking elements can't get into the new Life-Line® "A" motor's 4-way seal, pre-lubricated bearings. Just the right amount of grease is put in at the factory. Your maintenance men won't need to grease the motor again. As a result, outage rate of all Life-Line motors averages one-half the rate of conventional motors. In addition, a new, exclusive fortified insulation system protects your motor.

Add-a-part control panels adapt easily to new circuits. Standard starting panels come with mounting holes so that you can add relays, fuses, voltage and current transformers without changing the size of the enclosure. No other manufacturer offers this advantage in flexibility or this saving in time and money.

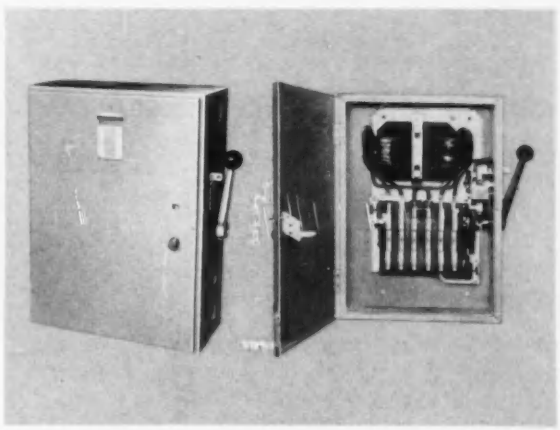
Westinghouse Control Centers bring motor control into one group of enclosures, under one person's supervision. This consolidation rids work areas of jutting control devices and frees machines of protruding boxes. You can install them in out-of-the-way locations, away from wet areas. Tilt-out position of starter units permits safe, on-the-job servicing. Unit becomes disengaged from power bus but rests firmly on support bar.

Horizontal split gear case of Westinghouse Gearmotors is an exclusive maintenance advantage. Remove a few bolts, lift the gear cover, and all gearing parts are free for removal or inspection. There are no intricate subassemblies. No need to drain oil, disconnect the couplings, or disturb the unit's mounting. Stop-watch time for dismantling a Westinghouse Gearmotor is 4.78 minutes. It's a record that can't be beat.

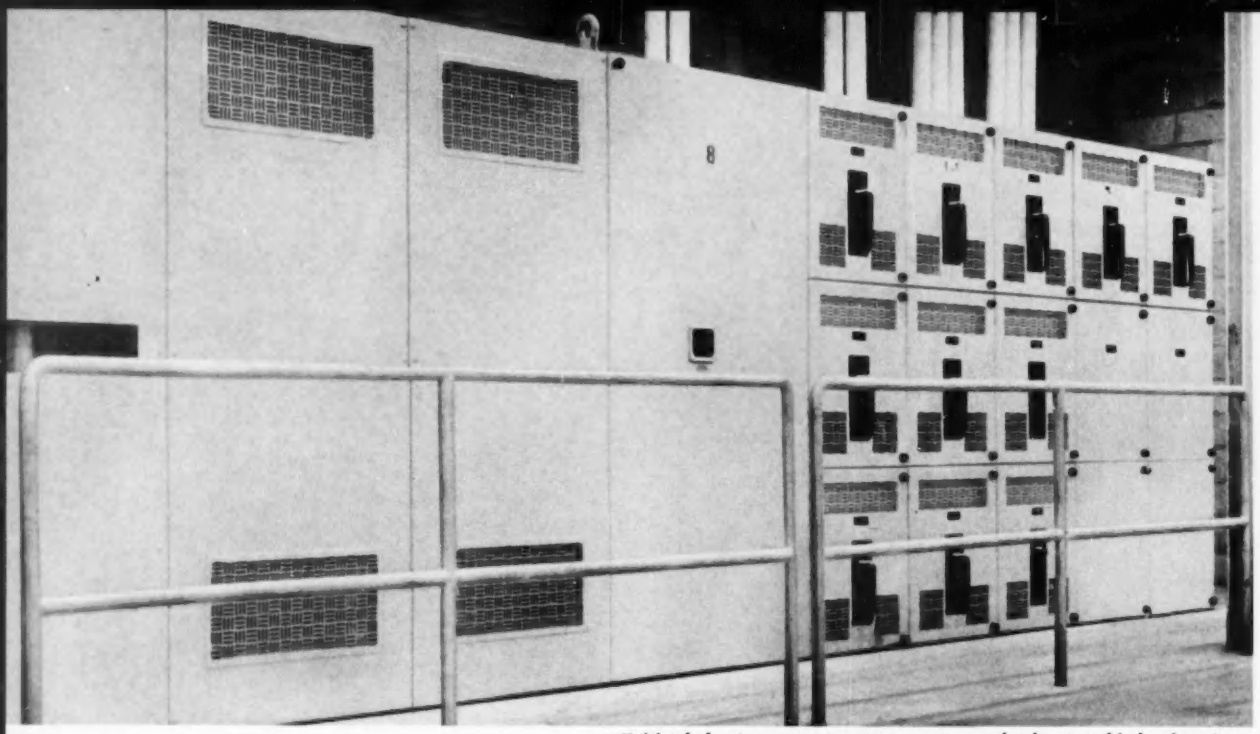
YOU CAN BE SURE... IF IT'S Westinghouse



Exclusive BPT hardening process conditions all gears and pinions used in Westinghouse Gearmotors to cushion impacts and resist surface wear. Horizontal split case makes parts accessible.



New Type MB Autostarters have air break contacts in all ratings. Visual signal during time sequencing assures you of reliable performance. Proved MW overload relays guard the motor.



Unitized dry-type power centers are completely assembled substations for indoor application. High-voltage switchgear is at the left, ASL dry-type transformers in the center, and low-voltage switchgear at the right.

Westinghouse Power Centers save distribution dollars

If you, like most paper manufacturers, face increased power loads, take a look at the Westinghouse Power Center. It has three job-tested advantages:

1. **Low installation cost.** This power center is a compact, metal-enclosed, coordinated unit. You don't need an expensive enclosure because there are no exposed live circuits. Put it close to the load center to shorten the secondaries and get improved regulation.

2. **Low maintenance cost.** Drawout air circuit breakers with the ASL dry-type transformer make the entire unit air insulated. There's no tedious testing, reconditioning and storing of liquids. No valves, gaskets, or liquid level indicators to maintain.

3. **Low expansion costs.** Using Westinghouse Power Centers, there's no need to rebuild or rewire. All you do is install additional breakers in spare feeder compartments.

Nationwide network of 38 Westinghouse apparatus repair shops, 56 field service offices, and 31 renewal parts warehouses backs up this 7-day-per-week equipment. Westinghouse service is always as near as your telephone.

Ask your nearby Westinghouse representative about any of the paper mill apparatus or services mentioned here. Ask him also for copies of these new booklets:

Magamp Regulator for the Paper Industry	**B-6073**
Magamp Sectional Drives for Paper Machines	**B-6109**
New Life-Line "A" Motor	**B-6154**
D-C Motors	**B-5791**
Life-Line Starter	**B-5882**
Life-Line Gearmotors	**B-5645**
Speed Reducers	**B-5646**
Steam Turbine Drives for Paper Mills	**B-4689**
Control Centers	**B-5621**
Power Centers	**B-4162**
High-Voltage, Metal-Clad Switchgear	**B-5306**
Low-Voltage, Metal-Enclosed Switchgear	**B-5282**
Turbine Generators	**B-3883**
Auxiliary Helper Drives	**B-6126**

Or write to Westinghouse Electric Corporation, 3 Gateway Center, Box 868, Pittsburgh 30, Pennsylvania.

MP-3022

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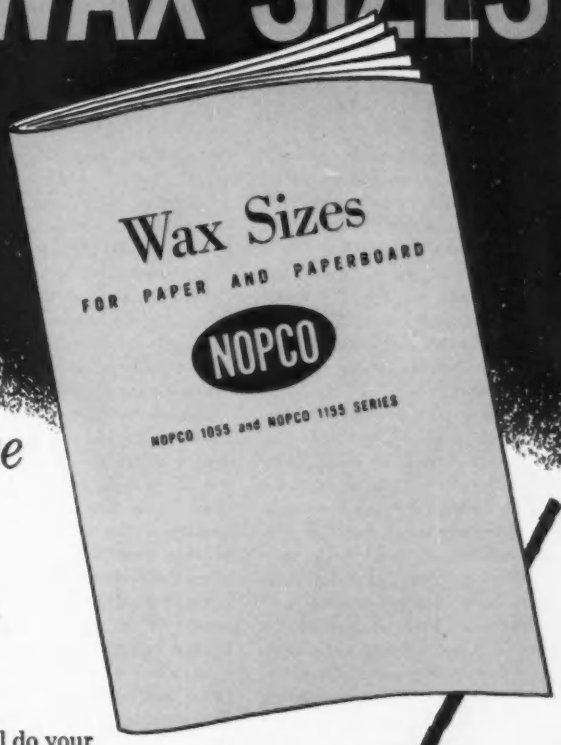
Presenting...

NOPCO® WAX SIZES



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Today, whether your main objective happens to be printability, gloss after calendering, scuff resistance, resistance to water...to hot liquids... to lactic acid...or whatever, Nopco can now offer you the wax size that will do your job most effectively, most economically.

The 1055 Series are all-wax sizes; the 1155 Series are rosin-wax. Within these two Series, you have a complete choice of wax sizes offering the desired melting point, percentage of wax solids, and other important physical and chemical properties. Waxes of both crystalline (paraffin) and microcrystalline types are available.

The sooner you get acquainted with these versatile sizes, the better. Mail the coupon today before you have a chance to forget.

NOPCO

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Harrison, N. J.

Please send me a copy of your booklet, "Wax Sizes for Paper and Paperboard."

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Printing of Folding Paper Cartons by the Letterpress Process of Printing

Walter E. Sooy

Senior Vice-President, Gardner Board and Carton Co.

A brief discussion of printing surfaces on paperboard should properly precede a discussion of letterpress carton printing. The majority of cartons are printed on bleached manila, white patent coated and machine clay coated board.

For good printing results by letterpress, a good smooth surface is needed. But in the cutting and creasing department the interest is in the folding qualities of the paper board, rather than in the smooth surface.

The board mill can produce an excellent printing surface by reducing fibre length in the jordan. Then, on a cylinder paperboard machine, short fibres can be closely formed into an even surface, excellent for printing. But this procedure will produce a sheet with poor folding qualities. On the other hand, if the mill goes to the other extreme and keeps the fibres as long as possible, it will produce a board of excellent folding qualities but poor printing surface, especially for printing on fine-screen cuts.

The board mill must operate, as nearly as possible, midway between these two extremes in order to produce the best possible printing surface and at the same time maintain acceptable folding qualities.

Assuming a 4-color process design and engravings made by using 110-line screen, a very light impression can be carried. If too great an impression is used, sharpness of the dots is lost and the engraving wears to the point where it will change the appearance of the 4-color process printing job. For this reason white patent coated or clay coated paperboard lends itself to better advantage in the printing of fine-screen cuts.

Clay Coated Board

Machine clay-coated paperboard became first available in the year 1940, and has become very popular because it gives better light fastness, better printing surface and increased brightness compared to uncoated paperboard. From the paperboard mill viewpoint, it is possible to combine long, well hydrated fibres to secure maximum folding qualities followed by machine clay coating, calendering and obtain a good printing surface.

Original engravings from which printing electros are made will vary a great deal in quality. It takes proper specifications, close supervision, and a lot of "know how" to produce suitable engravings that will fit the cutting and creasing die, register color-to-color, and be deep-etched with no shoulders, so that good, sharp carton printing can be produced.

Engravers' proofs should always be made on the actual carton stock, rather than on hard finish enameled stock. Unless the proofs are on the actual carton stock it is not possible to judge the quality of the etching of the engraving because defects do not always show up when the proof is pulled on the enameled stock. Too often, new engravings are received by the carton printer when he is behind schedule. This means a rush job to produce the cartons for delivery on time, and sometimes there is no opportunity to examine or correct any defects that may be present in the original engraving. This militates against desired printing quality.

Flexibility

Letterpress printing has many factors of flexibility that are desirable. Individual printing plates can be moved to register one color with another or into proper strike-in position with the cutting and creasing die. In the making of combination forms it is possible to run several colors from one ink fountain. To make quantities right on combination forms, one or more printing plates can be changed throughout the run without disturbing the balance of the printing form. Other advantages are: clear, sharp reproduction of type matter; on repeat orders true reproduction of the initial run can be maintained even though it is necessary to mold new printing plates from the original engravings; minor changes in the copy can be made on one or more printing plates without remaking the entire form; the printing plates have a long life; it is possible to secure a high gloss finish to the ink without the necessity of an extra operation to apply overprint varnish. Gloss ink will not yellow with age, as does overprint varnish.

Letterpress Limitations

In fairness it should be stated that there are certain limitations to letterpress printing which include the problem of offset on the back of the printed sheet, the necessity of using non-offset spray materials that leave a rough finish on the printed surface of the carton, long periods of time required for thorough drying of letterpress inks, the necessity to leave plate hook room on some types of printing forms, and the desirability of using 100 to 110-line screen (occasionally 120-line) for making the engravings. For the production of certain subjects, if a screen of 150 lines, or finer, is desirable, it may be necessary to go to offset or gravure processes of printing.

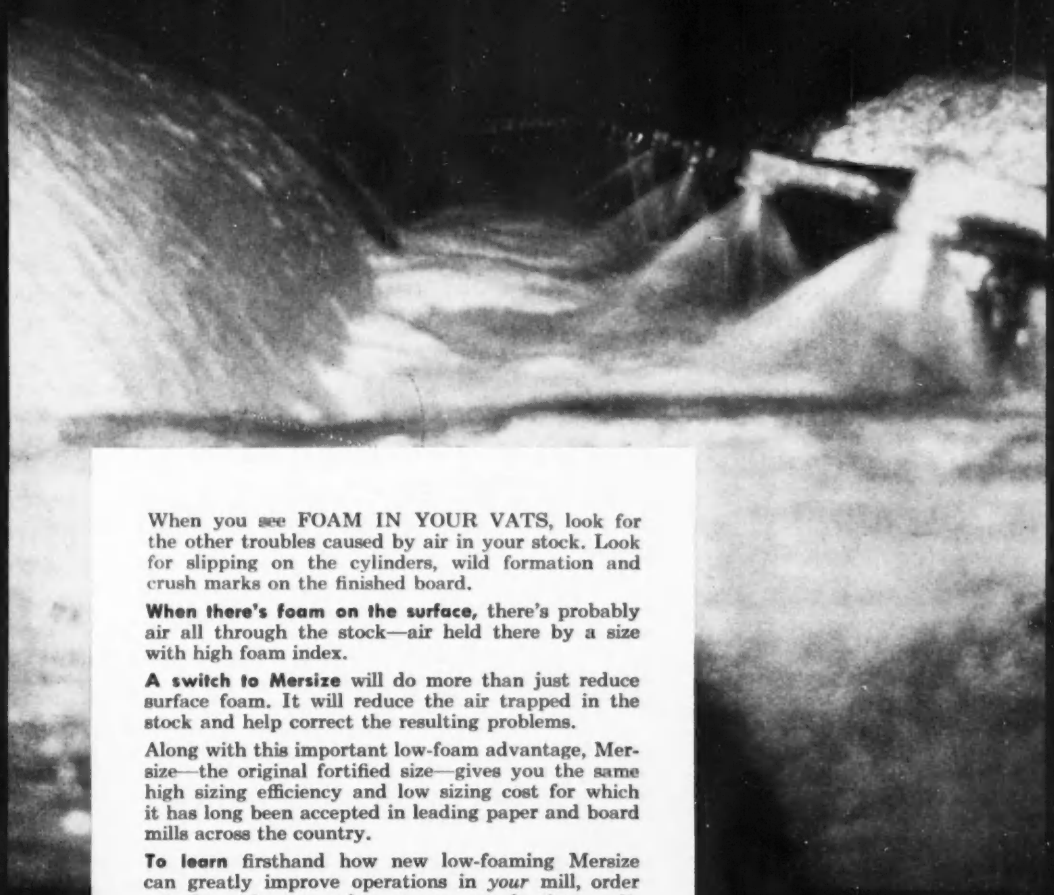
A frequent question is "What is the type of printing equipment or printing process that is going to be used in the printing of folding paper cartons in the future?" This can be answered by stating that the type of printing equipment depends entirely upon the carton specifications, volume or quality of cartons ordered, whether the carton is to be printed in one or more colors, and if the printing design calls for solids, types or fine-screen process printing. Also to be considered is the standard of quality that will be necessary to maintain in producing the job.

As to the printing process, all the advantages that one may look for are not confined to any single process of printing, whether it be offset, lithography, rotogravure or letterpress. They all have their advantages and disadvantages. If a run of cartons is to be produced economically, the question must be studied to determine which printing process will lend itself best to the reproduction of the subject or the copy to be printed.

Summary of a paper presented before the 16th Annual Forum of the Packaging Institute.

Monsanto Paper Chemicals:

Mersize Reduces Foam on the Vat



When you see FOAM IN YOUR VATS, look for the other troubles caused by air in your stock. Look for slipping on the cylinders, wild formation and crush marks on the finished board.

When there's foam on the surface, there's probably air all through the stock—air held there by a size with high foam index.

A switch to Mersize will do more than just reduce surface foam. It will reduce the air trapped in the stock and help correct the resulting problems.

Along with this important low-foam advantage, Mersize—the original fortified size—gives you the same high sizing efficiency and low sizing cost for which it has long been accepted in leading paper and board mills across the country.

To learn firsthand how new low-foaming Mersize can greatly improve operations in *your* mill, order a tank car for use under your own production conditions. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, Box 478, St. Louis, Missouri.

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Testing Glue Adhesion to Cartons

I. G. Nichol

Assistant Sales Manager, Paisley Products, Inc.

For practical purposes the adhesion on board was discussed from the mechanical aspect, and not as a molecular or chemical linkage. It was assumed that penetration of the adhesive into the pores and locking into the fibre interstices was the mechanical function in question; however, other primary functions of adhesives cannot be ignored such as: chemical compatibility, suction and tack of the adhesive itself in relation to the successful final bond.

Let us first discuss board absorption qualities that are basic physical properties affecting the final bond strength or adhesion, when considered from the mechanical aspect. Absorption plays the all important and basic part in relation to depth of bond and speed of act. Absorption quality of boards can have wide variations, depending on density, moisture content, type of coating and thickness of final finish. The tests to be discussed will have a direct relation to absorption and its functional effect on adhesion when correlated with and applied to a practical use such as a high speed carton sealing operation in active production.

Some useful absorption tests were set forth that can be run in a laboratory away from the actual production line. From these tests conclusions may be formed to give indications of what to expect from a particular board stock prior to its reaching actual production. Indications obtained from these tests can, in many instances, save time and production loss if properly catalogued and the periodic tests recorded and maintained with their correlation in regard to actual production runs. After the records have been established, each succeeding test record can be compared to a past tabulation and, when indicated, steps can be taken to prevent production tie-ups before they actually occur.

There are a number of absorption tests; but, for obvious reasons, not all will be discussed here. I have chosen two relatively simple tests which do not require a practiced technique and are relatively easy to perform.

Oil Test on Patent Board

This test is used to determine absorption of board and to qualify the board tested as per a standard.

The board to be tested is cut into strips $2\frac{1}{2}$" by 6" and is placed on an inclined panel which is 8" wide and $8\frac{3}{4}$" deep. The usual procedure is to insert thumbtacks on the inclined panel in the form of a "U" and slide the board to be tested into the slot formed by the thumbtacks. The board to be tested should then be 1" from the top and 6" side should run parallel with the $8\frac{3}{4}$" side.

The oil used is Fischer Scientific Company #0-1191 white mineral oil U.S.P. (oil, paraffin), light-domestic, viscosity 125/135. An oil-soluble red dye is used in the oil only for indicator purposes, so that it does not make any difference what is the ratio of concentration of dye to the oil.

A burette filled with dyed oil is placed directly in back of the 8" vertical side of the jig. The aperture is directly above the $\frac{3}{4}$" inclined plane. The oil is dropped in equal amounts three times on the board to be tested; this is done by opening the petcock allowing a drop to deposit. Move the jig and repeat until three drops are running parallel on the same board. When the oil has spent itself, the track is measured in millimeters; 85 to 90 millimeters is considered standard.

Drying-Speed Test

The drying-speed test, when conducted with the same adhesive, but with various boards, is basically an absorption test. Proper evaluation of this test can be valuable when compared to the compression time of the equipment that will be used in production. It is important to have adhesive films that will be similar to those that will be machine applied. Conditions of plant operation can, therefore, be simulated.

It is important to select an applicator rod which will approach actual machine film application. One manufacturer of this type of applicator rod is the R. D. Specialties Co., Webster, New York.

The working surface must be smooth (glass or other similar smooth surface.) The board selected must be anchored to the surface so it will not move when the adhesive application is made. The board to be adhered with the controlled adhesive film should be cut into strips approximately 1" wide. Since this is a drying-speed test the length or width of board stock has no special significance so far as the test is concerned; but mainly a personal preference.

To perform the test:

1—Select the proper wire draw-down rod. (#30 is often used).

2—Pour the adhesive at the top of the sheet along a line sufficient to be used for the film with a surplus that will be removed in the draw-down. It is important to do the following in the order stated:

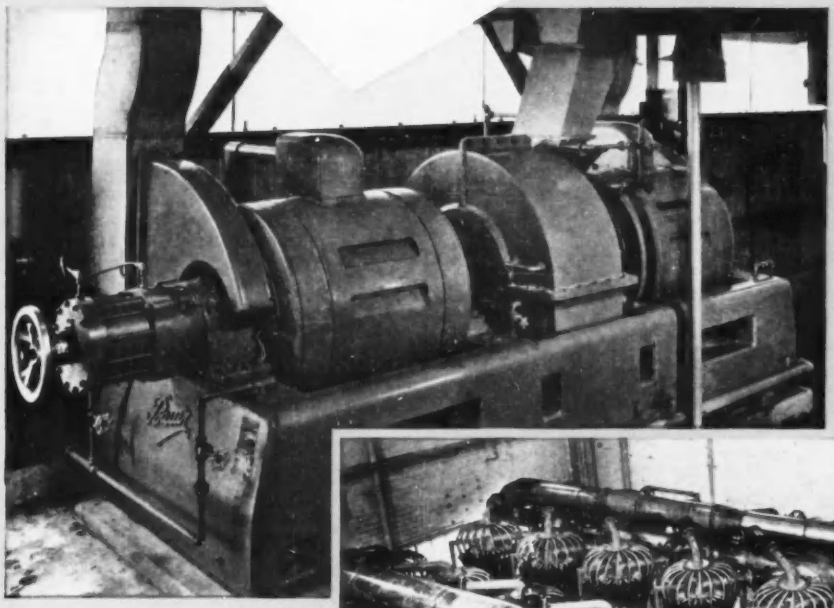
a) Draw-down the rod making the application.
b) Immediately start stop watch.
c) Put top board on the stock with the metered film, and rub your hand down over surface to insure contact.
d) Strips are pulled at 5-second intervals and the adhesion noted. After a substantial tear bond is obtained, you will have a "time" record, required for this bond.

From the above test, indications can be obtained when correlated to practical machine use. They take much of the guess work out of whether a particular board or adhesive, for that matter, will possibly work in the time allowed under production conditions.

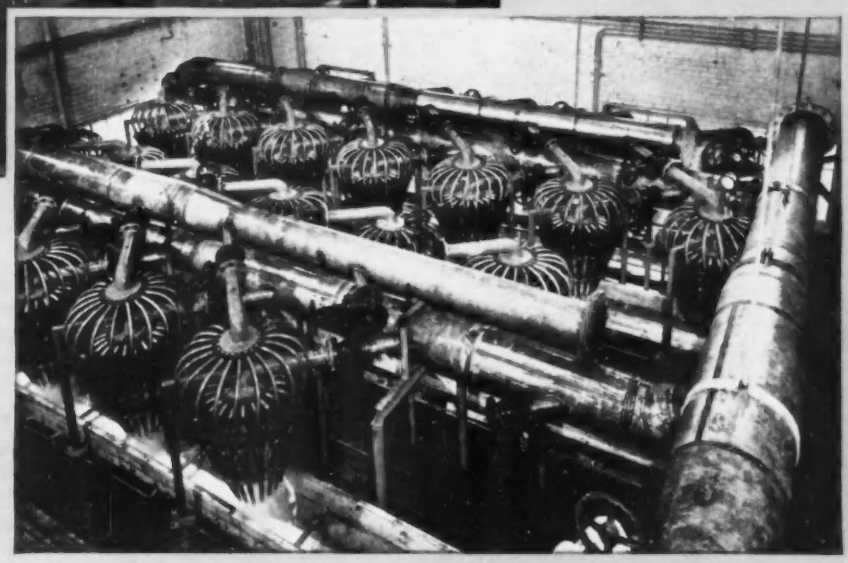
Practical runs on actual plant machines will be a true test. If proper evaluations have been made on the tests laid down, it will follow that the higher the absorption of the patent coated board, the deeper the bite and the greater the speed of adhesion. Naturally, in this discussion, we are not considering any board that would be of such a porous nature that it would cause actual starvation bonds due to lack of adhesive solids on the surface. Various types of adhesives and their particular properties of adhesion are not considered in this evaluation.

Summary of a paper presented before the 16th Annual Forum of the Packaging Institute.

GUARANTEED QUALITY OF SEMI-CHEMICAL PULP *with* BAUER REFINERS *plus* BAUER CLEANERS



Bauer Double Revolving Disc Refiner in a Southern Paper Mill



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Wire Staple Fasteners

John Bliss

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Our industry specializes in the design and manufacture of tools and preformed staples, for assembling and fastening soft, semi-hard, and certain materials together with metal staples, ranging from a facial tissue to stitching two pieces of soft sheet steel together. Other important materials, such as wood, textiles, fibreboards, and soft materials, can all be fastened together with staples.

Our most popular tools are known as staplers, which are used as tackers, hammers, pliers, etc. These are designed for using preformed staples. Concerns in our industry have developed several hundred models of these tools, used in many thousands of applications. These tools are produced in both portable and stationary styles, and operated by foot power, or hand power, electric motors, and compressed air.

The second group of tools are known as wire stitching machines of which our industry has developed about 50 standard models. These tools produce wire staples from a coil of wire and then apply these staples to the materials to be fastened together. These machines are widely used by box manufacturers, the printing industry, automobile manufacturers, and book match industry, etc. They are also widely used by many industries in shipping departments.

In the shipping department of all industries using corrugated boxes, our tools have wide usage with very successful results.

Our industry has designed five tools for bottom stitching boxes prior to filling. Four types of tools are used for sealing tops of boxes after they are filled with contents, and stapling machinery has been available for some time that automatically staples tops and bottoms of boxes, in one operation. Our most recent improvements stress portable compressed air types and automatic tools used with conveyors.

In general, stapling tools, as used in shipping rooms, increases production. The percentage of improvement depends upon the size and shape of the box and the methods of closure formerly employed.

The wire staple seal is a positive and permanent fastener. The quality and strength of the metal fastener, in most cases, has a longer life than the product that is fastened together by it. This wire stitched seal is not affected by high or low humidity, or long storage. The seal is controlled and completed by the machine and thereby eliminates the human factor. The staple seal for box closures is considered pilfer proof, because any tampering can be detected by the receiver.

The cost of staples depends upon the type, size and quantity of preformed staples or stitching wire purchased by the consumer. In general, they compete, and in most instances favorably, with other sealing materials. Most staples are made from low carbon steel wire, because of the uniform quality and the low cost factor. Where prevention of corrosion is important, staples can be made by brass wire, stainless steel wire, and aluminum wire.

Summary of a paper presented before the 16th Annual Forum of the Packaging Institute.

Features of Wire Staple Fasteners and Tools

1—Staples can usually be positioned where they are most effective—where you want materials positively fastened together. This condition sometimes saves materials such as box board.

2—Staples frequently can be applied with portable or conveniently designed tools, thereby reducing effort and increasing production.

3—Stapling tools are designed for fast application of staples. Rate of speed for application from 2 to 8 fasteners per second.

4—The uses of staples or wire fasteners are extremely large. Staples are used in all offices, in many production departments, and in shipping rooms.

5—Wire staples are inexpensive, clean, quick and easy to apply. They are not affected by temperatures or humidity. There is no depreciation in the quality of the stitching wire or preformed staples if they are kept dry.

6—The investment required by customers for staple or stitching tools is very moderate, ranging from a few dollars for hand tools to as little as $200.00 or so, for power tools, depending largely on the type and quantity of the work to be done. Of course, multiple head and automatics may range up to $2,000.00.

7—There are about 1000 models of stapling machines and wire stitchers, which can be selected as standard machines, or adapted with few changes, as special machines to do an unlimited number of fastening jobs.

8—Wire stapling is an ideal method and often the only practicable means of fastening two, or more, widely different materials together, such as fabric to steel, rubber to aluminum and many other combinations.

9—Stapling and wire stitching often cuts the cost of certain assembly operations from 25% and 75% of the cost of other methods.

10—Most stapling machines are so easy to use that green operators soon outproduce skilled workers using other methods.

Case Histories in Solving Packaging-Odor And Flavor Problems

L. C. Cartwright and Patricia H. Kelley

Foster D. Snell, Inc.

Careful organalystic testing of products by scientific methods used by trained personnel on a tasting panel and by correct statistical treatment of the results is a means to detect foreign or off-flavors and odors where the most refined chemical analytical methods are unable to detect their presence. This fact makes panel taste-testing an important tool in trouble shooting where complaints of vague foreign flavors are being investigated, or where an effort is being made to select proper packaging materials in anticipation of similar troubles.

The task of creating an adequate tasting panel is a big job in itself, for it not only involves screening out those individuals whose sense of taste is not sufficiently acute to be of reliable value, but also training the experts who survive the elimination tests. A trained panel has been able to diagnose the cause of off-odors and off-flavors in several interesting problems connected with food and other products.

One case was Scotch whiskey having an off-flavor in which it was found that the offending flavor was Sherry wine. Scotch whiskey is usually aged in Sherry barrels that normally produce no ill effects but Sherry wine added to "uncontaminated" Scotch whiskey duplicated the foreign flavor. Hence it was decided that some residual Sherry must have remained in the barrels in which the Scotch had been aged.

An off-flavor in frozen foods was traced by this panel-tasting technique to an insecticide used on growing vegetables prior to their freezing in cartons.

Not all packaging flavor-problems are caused by the packages themselves, as was true in the preceding instance, and was true in the case of green (unroasted) coffee that gave off a strong phenolic odor which carried over to the roasted coffee in amounts sufficient to cause consumers to reject it. Careful testing plus some detective work revealed that the green coffee had been stored in a warehouse which had received a new floor. Prior to laying it, the old floor had been treated with creosote. During periods of high humidity and high temperature when the warehouse was kept closed, the odor of creosote was intensified in the air and would be absorbed by the green coffee and the burlap bags in which it was held. Incidentally, it seems that a damage claim for contaminated packaging paper products had been paid by the supplier who had stored the materials in the same warehouse but had not thoroughly investigated the cause of the complaint.

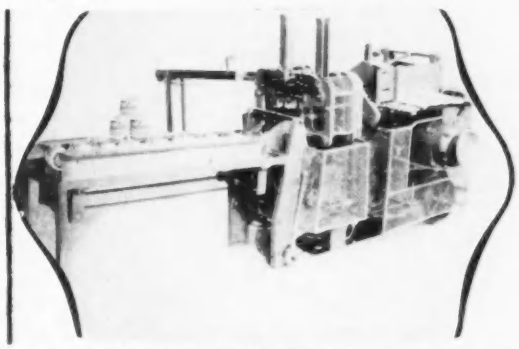
In another case the problem was traced to a foregn substance lodged in interior crevices at the top and bottom seams of steel drums used for carrying a liquid sugar product used by a brewer. The syrup had a phenolic taste. Ordinary steam cleaning of drums could not be expected to remove all the trace material causing the trouble. (It was not stated whether these drums were new or re-cleaned used drums).

The taste panel technique has been used to evaluate the liners for screw caps for mayonnaise in order to select the liner material that, in contact with the product, would be least likely to cause rancidity. Five liner materials were tested and two were found acceptable.

Similar investigations have been made to determine the most suitable adhesive for binding cork in cork board for insulating cold storage warehouses, and also for evaluating waxed paper intended for multiple use in packaging foods.

Summary of a paper presented before the 16th Annual Forum of the Packaging Institute.

Lawtomatic ROLL WRAPPERS



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Positive Roll Delivery

LAWTOMATIC CULL CUTTERS
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Sufficiently strong to back any responsibility we assume for you

THE C. A. LAWTON CO. — (LAWTOMATIC) DE PERE, WISC.

Recent Developments in Paperboard Industry Related to Food Packaging

Joseph J. Aid

Assistant Research Director, Robert Gair Co.

Three new products; stabilized boards, polyethylene coated boards and insect repellent boards are now commercially available. Stabilized boards are chemically treated to retard the development of rancidity when the board is in contact with oxidizable oils or fats that might wick into the carton board. Field trials have proven the effectiveness of these boards for packaging cereal, filled cookies, crackers and many other items. The advantages of these newly developed carton boards are obvious to packagers confronted with a rancidity problem. The elimination of inner bags and special wrappings is a decided possibility in many cases. All conventional grades of boards can be stabilized.

Conventional grades of boards are now available coated with metalized or clear polyethylene. The characteristic properties of polyethylene, such as its water vapor resistance, excellent flexibility, chemical inertness, anti-stick, permeability by carbon dioxide, grease resistance, excellent aging, heat sealability and others, suggests attention by packagers of bakery items, candies, cake mixes, and so forth. For many uses, the combination of stabilized board and polyethylene coated board results in an economical packaging medium of unusual utility and heretofore unavailable.

Available in clay coated board only, is insect repellent boxboard and cartons. Regular seal-end cartons of the insect repellent type have been subject to numerous infestation tests with the result that 70 to 100% reduction of infestation was obtainable as compared to conventional cartons and tight wrap shells. Carton sealing adhesives and printing inks can also be treated to offer further protection against insect infestation.

Summary of a paper presented before the 16th Annual Forum of the Packaging Institute.

Drying Paper Faster

Drying efficiency depends upon the ability of the dryer felt to take up water and to get rid of water—*the drying rate of the felt itself.*

Barrell Tour Boss L. D. Felts have a fast absorbing surface ply and fast vapor-eliminating surface—a double surface fabric with high capillary power. Note the close texture face surface above in contrast to the open weave back which offers approximately 30% greater evaporation area. The felt absorbs water faster—gets rid of water faster—improves paper-drying rate.

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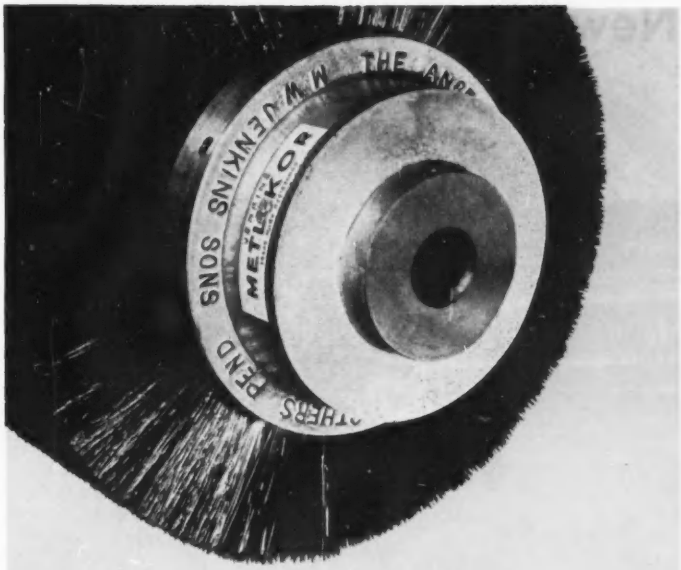

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What's to stop your mill from cutting replacement costs — and still running a top-speed schedule? Here's a method — and paper men who know swear by it!

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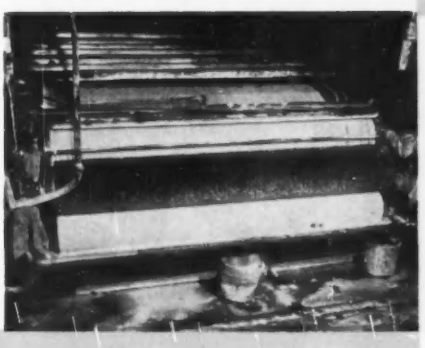
That's why, with Jenkins' METLKOR brushes, you can have your cake *and eat it too!* If you have a special brush problem, call on us, or write: M. W. Jenkins' Sons Inc., Cedar Grove, Essex County, N. J.



Paper coating machine with splash guard removed to show Jenkins' METLKOR cylinder brush in operating position. Mounted above are three sets of Jenkins' LIFEWOOD flat brushes. Photo courtesy of Michigan Paper Company, Plainwell, Mich

ANOTHER JENKINS ACHIEVEMENT

Jenkins' famous flat coating brushes–grey bristle scrubbers, black china smoothers and badger hair finishers–are tuft-set with special cement LIFEWOOD, a new, exclusive, treated wood process, protects the wood against splitting, warping, checking, cracking, decay, pests, stains, mildew and fungi

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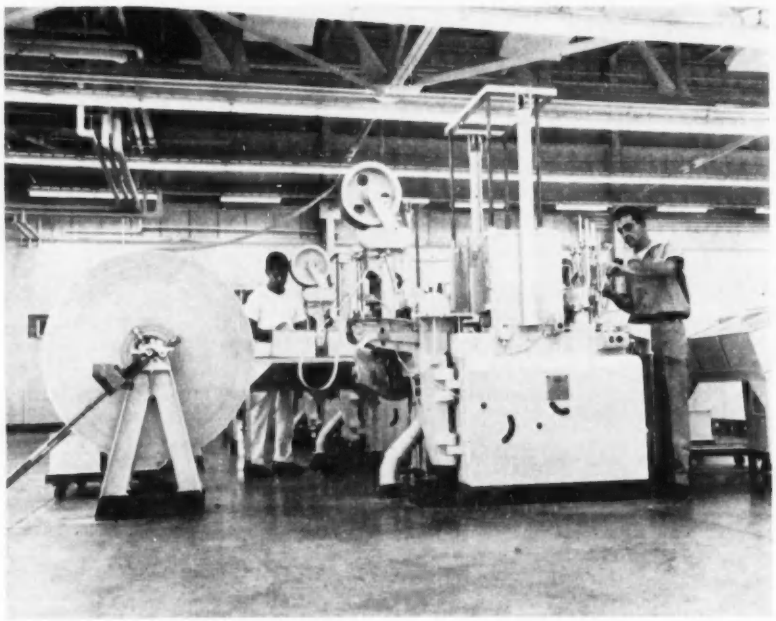
American Can Co.'s New Milk Bottle Plant

Newest paper milk bottle plant in the country, and the first of its kind in New England, is that of American Co. in the suburbs of Boston. Here on Route 128 near Needham, American Can Co., this fall, opened a plant with a productive capacity of 300 million milk cartons annually. Approximately 8,000 tons of paperboard will be used for this production. The containers produced at this plant are of the quart and half-pint size. This is Amtrican Can's second plant in Needham and 60th in total.

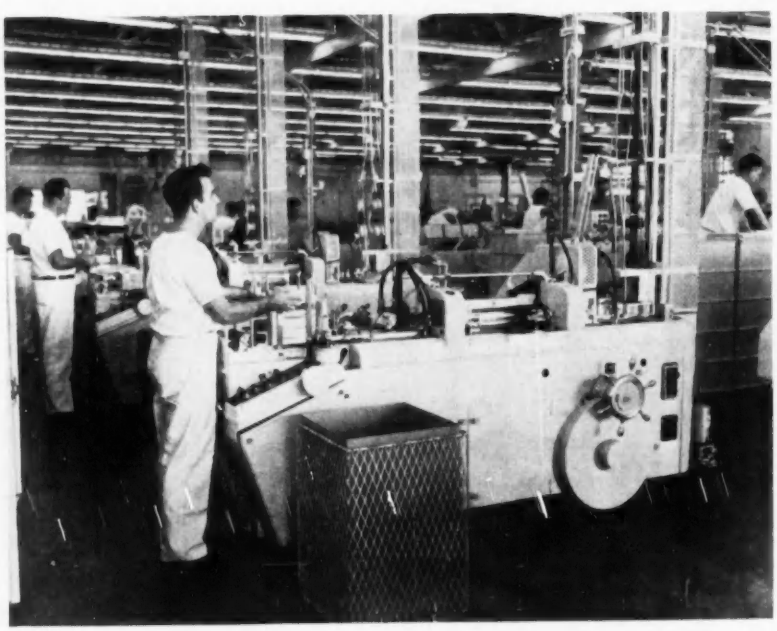
Equipment is housed in a one-story building with brick and aluminum exterior. It contains 140,000 sq. ft. of floor space, accommodating several high speed production lines, each capable of making as many as 260 milk cartons per minute.

The containers are fabricated of special paperboard provided by West Virginia Pulp & Paper Co. In the first manufacturing operation, the board is printed with customers' labels and in blanks which are formed into the container body on mandrels, and sealed with a thermo plastic adhesive. Other machines cut and form tops and bottoms for the containers. A special machine attaches these to the bodies. The cartons are then coated inside and out with paraffin wax in a special enclosed area where only filtered air is admitted. While still in this area, the containers are automatically drained of wax, cooled and sealed. Having been sealed in a sanitary atmosphere at the plant, the containers are shipped in sealed paper bags to the dairy. Here they are only opened momentarily for filling and are resealed.

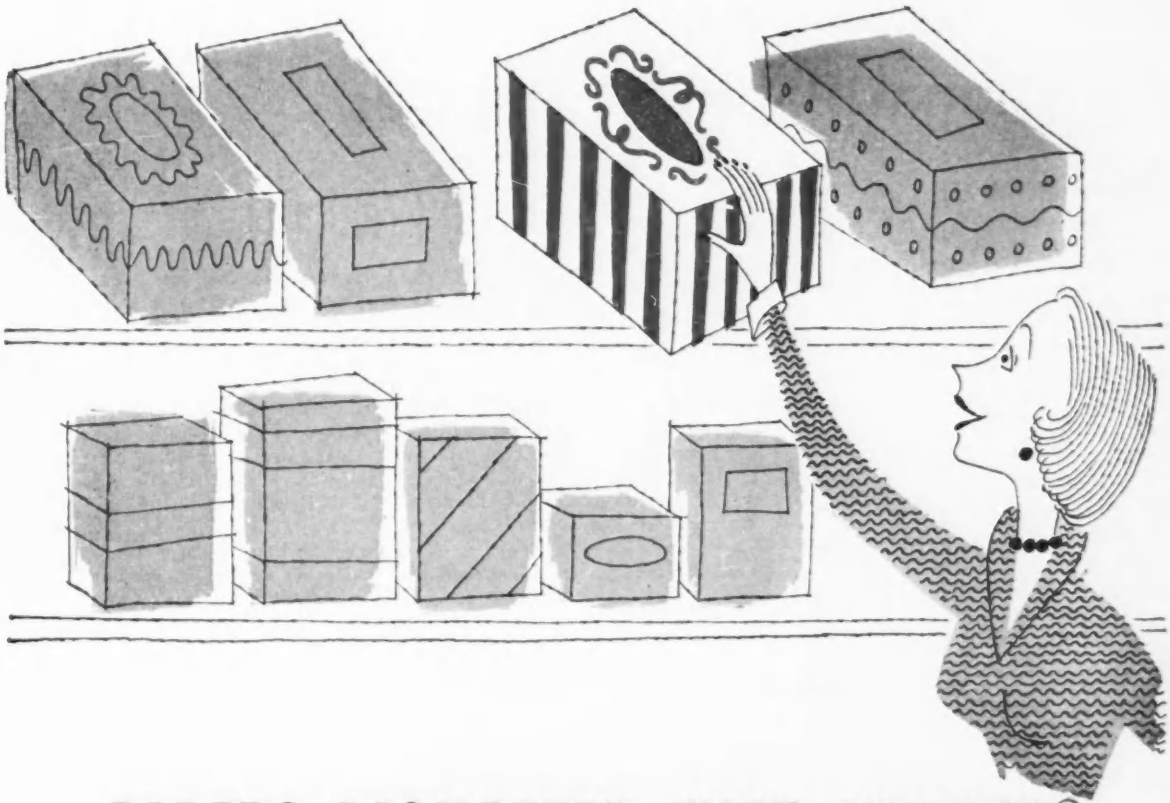
Paper milk containers were first manufactured in 1934 to the amount of a few thousand. Today there is a productive capacity of 10 million such cartons per year. The finished cartons are shipped to dairies all over New England by rail and truck from plant shipping docks which can provide space for the simultaneous loading of eight trucks and eight box cars.



THIS AUTOMATIC MACHINE converts large rolls of paperboard into bottoms for the cartons which are assembled in later operations. The operator is gathering the formed bottoms as they emerge from the machine for transfer to the container assembly line.



NEW HIGH-SPEED MACHINES assemble paper milk containers faster than the eye can count them. The containers on the elevator at left are passing from "body maker," which forms the rectangular carton bodies, to the machine which attaches tops and bottoms. Operator is inserting bottoms into a tube that automatically carries them to the correct assembly position.



PAPERS PIGMENTED WITH TITANOX® MAKE BUYERS OUT OF SHOPPERS

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A classic example of "making salesmen out of paper" is the white, opaque bread wrapper. But the field is ever broadening, in every kind of consumer merchandise as well as foods.

You'll want to use titanium dioxide pigments for your paper products for packaging. And you'll select TITANOX® for titanium dioxide pigments that always give the most consistent, top-quality results.

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Effect of Minute Paper Variations on Functional Paper Properties

Millard M. Muntz

Chemist, P. H. Glatfelter Co.

In the printing of papers for packaging, there has been a steadily increasing trend during the past few years toward the rotogravure and flexographic printing methods. This trend has been influenced by such factors as:

(a) The need for speed, which brought about the development of packaging and wrapping machinery capable of handling printed functional papers in register, from rolls.

(b) Functional properties of packaging papers (also films and foils) often makes it difficult or impossible to print by either letterpress or offset.

(c) The growing demand for multicolor printing and the requirements for continuous tones in preference to half-tone dots, favors the rotogravure method.

(d) Varieties of materials such as varnish groundcoat, over-coats, heat-seal, moisture-vapor resistance applications, can conveniently be applied at the first and/or last rotogravure stage.

The growth of this type of printing coupled with the increasing demand for functional papers has caused the papermaker to intensify his efforts to meet the relatively exacting requirements for paper used in the printing and packaging industries. Some examples of these properties are: dimensional stability; high density for maximum wax and lacquer hold-out; minimum bulk; maximum stiffness; and specific scoring properties. Combinations of such characteristics in paper and paperboard, for which finer printing surfaces are also required emphasizes the need for more uniformity in overall paper properties.

Basis Weight Variations

Variations in the basis weight at the wet end of the paper machine, which may still be within the 5% trade allowance, have an overall effect upon the uniformity of the physical properties of the finished paper. These normal basis weight variations, which occur in both the machine and cross-machine directions throughout the paper web, are not particularly pronounced unless the web is examined in relatively small areas. (For example, four square inches as compared to a 24 x 36 area).

Possibly the caliper-basis weight relationship can be explained by the fact that positions of higher weight receive more effect from the calendering action and therefore have a higher apparent density than the positions of lighter weight. This density acts to prevent the paper from springing back after the compression the paper receives from calendering. On the other hand, the light weight areas receive little calendering and, as a result, is spongy and the caliper can spring back to a greater extent.

The printability of a sheet of paper is determined by such characteristics as its ink receptivity (both in degree and uniformity), smoothness, compressibility and opacity.

Ink receptivity is measured by the coverage of ink on the surface of the paper as a result of the printing plate impression. To have good ink coverage, the paper must be as smooth as possible in order to give the best possible contact between the printing plate and the surface to be printed.

The smoothness variation is of such an order that the printing plate may have good contact on one position and insufficient contact on another.

To makes the paper smoother, the paper web is passed through one or more calender nips or stacks. Here, caliper is decreased and the apparent density of the paper is increased. As the paper web with a variation in basis weight passes through the calendering nips, the areas having more weight receive more calendering action which results in density variation. This variation is commonly measured by a Gurley densometer.

Density Variations

Density variations affect the oil-absorbency of the paper resulting in ink receptivity variation. On the highly dense portions of the sheet, the ink is slow in penetrating and offsetting may occur in these denser portions for a given amount of ink being used. In the case of high-gloss printing, on the other hand, it is very important to keep as much ink on the paper surface as possible and one factor influencing this is the use of a paper of high density. It follows then that, if the density variation is too great, the less dense portions will absorb more ink than the more dense portions and a variation in printing tone will result.

Density is also an important property in relation to the ability of the paper to compress when in contact with the printing plate as a result of the printing pressure. The inability to compress evenly, prevents all portions of the paper surface from coming into contact with the surface of the printing plate to the same degree. This difference results in a non-uniform ink coverage and uneven printing tone.

Density may also serve an important role in the application of labels to containers. Most labeling machines use suction as a means of transporting the label to the point of application. In the case of extreme density variations, it is possible that the suction may be extended beyond one label and two or more labels may be lifted as a result of the excessive porosity.[1]

Uniform smoothness and density are also highly pertinent in coating and laminating operations. Uniformity, of these two properties, is required to maintain a maximum holdout and a minimum pickup of waxes, lacquers, and coating colors, so that less material will be required to produce the optimum effect.

Non-uniform Caliper and Density

Poor scoring may result from a non-uniform caliper and density. As the scoring blade touches the paper surface, the sheet must compress evenly under the blade pressure to produce a good score. As the paper to be scored offers more

resistance to the scoring blade, a heavier score will result. The opposite effect will occur if a paper compresses too much under the blade pressure for the desired scoring qualities. This is also important in dyeing operations, although the moisture content of the sheet is, possibly, more important in this latter case.

Another example of the effect of the weight-caliper density relationship is illustrated by a grease-resisting base stock. We have found that on a size press coated, high density paper, subsequently coated with a synthetic material, that by graphing the grease penetration time versus the apparent density of the stock, a smooth curve results.

Papermakers have always been concerned by the non-uniformities in the physical properties resulting from the weight-caliper-density variations. Basically, the majority of these variations, as we have discussed, are often caused by a basis weight differences throughout the paper web. These variations are inherent and normal to paper manufacturing, being caused by many variables, such as stock pump fluctuations, changes in the head-box level, the shake of the machine fourdrinier, small changes in stock consistencies, etc., and are controllable to only limited extents depending on individual cases or machine systems.

As an aid in locating the weight variations in order to make proper machine adjustments to level the sheet, the atomic age has presented the paper industry with a seeing-eye in the form of beta-rays, which actually measures the mass of the paper web. The use of such instruments presents a readily available and accurate profile to guide the machine tender in making adjustments on the slice of his machine as to permit a more even flow of stock onto the fourdrinier or paper forming wire. In many cases, beta-ray gauges, which traverse the paper web, are installed on the paper machine and may directly control the necessary stock adjustments.

The author wishes to acknowledge the aid and assistance received in preparing this paper from P. H. Hershey, acting technical director of the P. H. Glatfelter Co., and F. J. Lovegren, head of the paper development and new products section.

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Summary of a paper presented before the 16th Annual Forum of the Packaging Institute.

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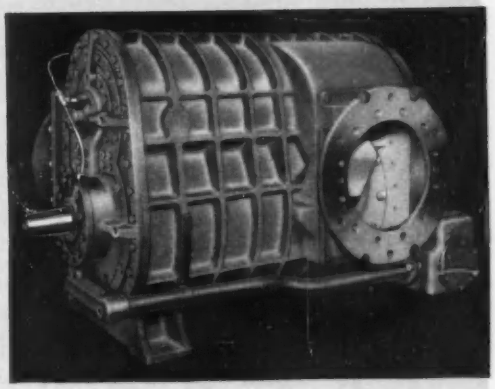

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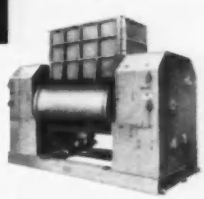


Asphalt Coating & Laminating

James D. Griffin

Glenfab Bag & Liner Co.

Historically— the protective qualities of "asphalts" in waterproofing — have been recognized as far back as the days of the Egyptians who used asphalt with which to embalm their dead as we now employ other preservatives for similar purpose. The use of asphalts in combination with paper products originated prior to the turn of the century and initial development then as now for protective usage in connection with bags which still remains the greatest tonnage outlet for the laminated material.

Prior to World War II— Production of asphalt laminated—saturated and combined products — (excluding those manufactured and used primarily in the building trades) was primarily a northern industry then specifying and using almost 100 percent northern kraft in their processing. Of these, approximately 28, converters, some 14 plants were concentrated in New England, New York and New Jersey, while another ten were considered mid-western producers with two each on the West Coast and two in the South where their principal outlet was for products of their own internal consumption.

In general— Industrial production was by rule of thumb with standards then set by individual preference and with but little attempt at standardization since each individual had his own trade to consider and the product was converted with the end use of that particular outlet then in mind. We recall then that technical testing with laboratory equipment was ruled as unnecessary since from experience, the feel of a sheet at times, determined its quality. During this period, pre-World War II, competition was not only keen for the then limited tonnage of around 150,000 tons annually but it was cutthroat with no attempt at industrial cooperation for the general good of all industry.

World War II—and the then prevailing demand for protective packaging for use on a global scale and under extremes of conditions not heretofore contemplated — brought the waterproof industry together when by mutual effort — individual policies were scrapped or modified for the greater good of the cause — an association was formed and standardization of product to rigid and high standards as specifications for product efficiency in end usage were perfected. These now have become the standard of the industry for continued use in peace time industrial protective packaging, the specification reference being JAN-P-125 for product standards. Post war, as with other divisions of the paper industry, has brought changes to this asphalt converting division of the paper industry, since the continued improvement in the quality of southern kraft has warranted an increasing use of this grade in asphalting, along with the removal of several converting plants to the South to be adjacent to a supply of kraft while installation of equipment both for sale of product and for supplies in internal consumption have brought about the installation of converting units in at least eight self integrated mills in the South.

Tonnagewise the outlet for World War II in protective papers fabricated with asphalts approached half a million tons which, though declining naturally in post war civilian usage, is again noting an upserge in rapidly broadened distribution. No converted protective paper product delivers the protective efficiency of an asphalt laminated material with its economical cost. In a review of general classifications of asphalt laminated paper products we find them divided into four general types or grades.

Duplex Grades

Duplex or sandwich grades of various types and combinations, whereby two sheets of material are plied together with asphalt as the adhesive or bonding medium, are multitude. They range from tissue to board on the paper side and from ten pounds of laminant to a hundred pounds or more if the requirement demands. Incidentally, perhaps a layman's explanation of comparison might here provide an understanding of the degree of protection which a small amount of combining asphalt laminant delivers in the finished product. For example, let's take the best known and most widely used combination of the industry as a whole, namely Duplex Grade 30/30/30, or in added explanation the combination of two sheets of 30 lb. kraft with 30 lbs. of asphalt for a 90 lb. ream — 24 x 36—500.

Literally, this means that the combining equipment is spreading 30 lbs. or 3 gallons of liquefied hot asphalt over the surface of a sheet of kraft that is 3000 square feet in area or, more literally, the application of 3 gallons or 30 lb. of liquid on the surface of a sheet that's 10 feet wide and 300 feet long. Moreover, this is controlled coating of a uniform application and at speeds that range from relatively low speeds on the older equipment to a thousand feet or more per minute in those of more recent modern development.

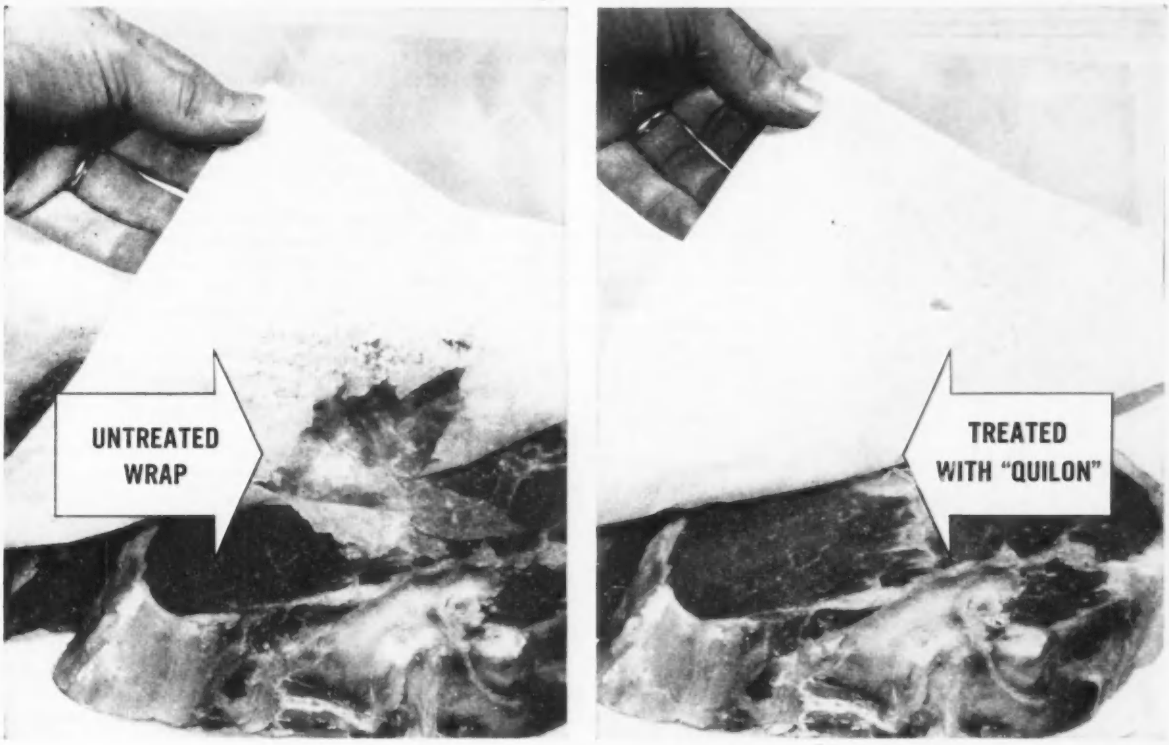
Universally, in general industrial standardization, this thin film of asphalt not only makes the finished product "waterproof" but in average value delivers a moisture vapor barrier with a half gram efficiency and with a radically low cost structure.

Re-inforced Grades

Of second importance, tonnagewise, is a modification of the above described duplex or laminated grade whereby a reinforcing medium is introduced into the bonding asphalts at time of fabrication to provide a finished material that's not only waterproof but also tear resistant for use where added strength is a prime requirement in end usage. The process of manufacture practically the same as that used in straight duplexing and with the equal in controlled efficient manufacture.

Commodities used as the strengthening material include jute, both in square mesh woven pattern of varying degrees of mesh, just strands as lengthwise or diamond mesh pattern or a combination of both where the requirement is necessary. Another important reinforcing element is that of "sisal" fibers which when introduced into the basic combining asphalts by processes that control the amount of reinforcing being added — provide a finished reinforced protevtive wrapping material both economical and efficient and now available in widths from 36" to 96" and 120" rolls.

Recently perfected glass fibers are now being introduced in bonding asphalts for an added reinforced material



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in addition to those above defined—their strength is almost unbelievable for the size or caliper of the individual strand.

Saturated Grades

A third general classification of waterproof papers in general can be defined as a saturated grade whereby the basic material such as board is immersed in a hot liquefied asphalt of a special penetrating nature, the fibers filled with the protective compounds and the resultant product — black in nature — affording a protective product for a specific end usage not served by other grades mentioned above.

An interesting sidelight involving this saturated sheet comes from standardization for greater efficiency in waterproof paper products in which the basic kraft industry provided the answer. Pre-war as a type under the duplex grade and principally used in export wrapping, a duplex grade was converted with a combination of kraft one side and a saturated sheet on its reverse — the product known in the trade as a "black and tan" type. Its one bad feature in use was the tendency of the outer saturated sheet to smudge or stain materials with which it came in contact and as such, though efficient, could not be used for many protective purposes such as the wrapping of textiles, etc. Here the kraft industry through research and development provided the converter with their new wet strength grade which when substituted in the old black and tan duplex combination for the "black" sheet voided the defect of staining previously experienced and provided a refined and more efficient material without any sacrifice in protective qualities.

Coated Types

The final grade in the general classification of waterproof papers can be defined as a coated or infused type whereby basic kraft materials of varied weight is either surface coated or surface infused with a blend of asphaltic compounds—generally developed for a specific end use and not for general trade adoption. So much for general materials description to which a great deal could be added to this brief sketch did space permit and now we should consider basic materials and their specifications going into the above grade combinations.

In general, kraft is the basic commodity for converting with combining asphalts and pre-war that kraft was universally preferred and specified where possible as a "northern sheet" or in other words, general trade preference for kraft northern made in a northern mill from northern pulp. In fact, for several years when the southern mills attempted the sale of southern kraft for the asphalt converters use, it was accepted then somewhat as a substitute commodity and a lower resale differential established for its use when compared with products from the northern grade. However, refinement in basic southern materials through their progressive research, and especially in the lighter weights of kraft, have perfected the southern grades of kraft developed from southern pulp until this differential has disappeared and even the northern converters adopted it as the equal of previous supplies.

To the asphalt converter, kraft with high tensile and a high uniform porosity is of prime importance for maximum efficiency in his finished product. Mullen or puncture of former importance has given way to almost complete elimination in purchase specifications and with the substitution of these two requirements. Various mills with their varied combining methods and diversified equipment, generally maintain a minimum 40 second porosity in their kraft specifications, particularly in the lighter weights.

The Asphalts

In laminants, basic asphalts vary as to other commodities as to their origin in production, early use of natural asphalt such as nature supplies at Trinidad, has been practically eliminated — to be taken over by supplies derived from the oil refining industry where recognition is given to the source of the supply of crude as for the adoption of the asphalt supply derived therefrom. Too technical for this brief discussion, however, we mention that here too standards both of individual preference to meet individual conditions and of standards for maximum efficiency in finished material, are today in general adoption by the waterproof industry as a whole. In general, consideration is given not only to the source but also to test requirements for such items as penetration, ductility, softening point, stain, odor, etc., which when developed and agreed upon result in a consistent supply of uniform laminant to develop the greatest efficiency from the protective finished product. Incidentally, while most converters receive their supplies by railroad tank car delivery, there are many in the vicinity of refineries who take their deliveries in tank trucks and at practically the same material costs.

Production Methods

Production methods vary from one mill to the other but in general the method overall is similar, namely either in roll coating and/or in knife or doctor blade coating methods. In each there are many modifications as suited to the individual's equipment or particular processing requirement but with finished

product standards now known and defined — the end results resemble each other.

There are two principal divisions in the roll coating method: 1—Single Coating (in general adoption). 2—Double coating (the development of several converters). In single coating the asphalt laminants are 100 percent deposited on one sheet of basic kraft (to specification of the grade requirement) and immediately thereafter the covering sheet of kraft or other material is plied thereto, whereas in the double coating method, 50 percent of the combining asphalts are each deposited on the sheet of basic material and the two coated sheets are then plied together in finished product.

Space will not permit any discussion of the merits or demerits of the one system as contrasted with the other, however, both systems have their own supporters and each with considerable merit in their argument favoring their own individual methods.

General Roll Coating

In general roll coating, two heated rolls are superimposed, the one upon the other with the hot asphaltic laminant picked up from a lower pan and transferred to the roll over which the sheet to be coated travels with the asphalt in controlled quantity being transferred from the roll to the kraft or paper then combined with the second or covering sheet the lamination or cementing together of the two sheets being supplemented by the added pressure of the "pressure" rolls through which the finished product then travels to the winder or finishing end of the converting equipment. Spacing of the coating rolls determines the amount of coating being applied.

Knife Coating

In knife coating, without getting involved in the several methods of general adoption, the sheet of kraft or other material to be coated passes over a coating roll partially immersed in the hot asphalt laminant slightly depressed in a V-shape control to maintain contact with the revolving coating roll. The sheet being coated acquires a coating of compound that is almost immediately scraped off to a controlled degree by the arrangement of a knife or doctor blade, that as adjusted removes any other than the desired amount of laminant from the sheet. It is immediately combined with the second sheet of kraft or other material being combined. Equipment used by the industry in general, pre-war, consisted of home made converters to individual preference and to individual engineering. It should be remembered that for many years the industry existed in intense jealousy and keen competition whereby individual outlets were a closely guarded secret with equipment developments designed more for the individual mill's outlet than for general distribution.

Machinery

Given a retired used winder, a few paper drying rolls, a coating stack or tank, with drive and available heating elements, laminating machines were developed, for specific usage at very reasonable costs. Many of these units continue in production but high speed combining laminators are being designed and installed and mainly by integrated mills at equipment costs that would stagger the old-timer.

One important material as developed from the lighter combinations of the duplex laminated or combined grades that should be mentioned is that of the creped or krinkled, both one way and two way stretch protective paper products. While generally available as creped kraft yet a considerable quantity of duplex asphalt laminated material is further converted over a supplemental "creping" machine which by a special

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process "pleats" or "crepes" the sheet back upon itself. This reduces its basic yardage and furnishes a flexible material that literally stretches when expanded in actual use. By special modification of equipment and process there is also converted a creped or krinkled sheet that stretches in both directions.

To those who may be interested in the technical variations of coating and combining processes briefly mentioned above and who may want to pursue the subject further, we refer them to a copy of "Machinery for Paper Coating," recently published as TAPPI Monograph Series No. 8.

In review—what did Specification JAN-P-125 and its adoption by the waterproof industry for Standardized Production mean both to producer and consumer?

To the producer—it developed a standard specification for all protective asphalt combined materials both as to basis construction test conformance and with a defined and usage per grade—this as a standard for industry wide compliance with the individual preference or interpretation removed and which has resulted in raising the acknowledged efficiency of the finished material to a uniform resultant standard of quality.

To the consumer—it has meant that he could specify and purchase a uniform grade of material from many sources of supply and therein be assured that supplies received would be of a standard quality. Further it literally spelled out to all interested the grade or grades recommended for specific end usage—as such voiding individual preferences and substituting factual evidence from test results as to the right grade recommended to perform efficiency for a specific protective job.

Perhaps the largest single end use of asphalt laminator protective papers today is their inclusion as one of the walls of a multi-wall bag. Either to resist the penetration into packaged product of exterior moisture or to assist in the retaining of a standard moisture content in the commodity so packaged. At times in special cases, two walls of the asphalt laminated sheet are required to service the protective requirement, but when so used the kraft content of the combined duplex along with the other walls of the kraft bag, still depend on the 30 to 60 lbs. of asphalt as the protective element whereas they afford the carrying medium only.

Post war and from war research developments there have been many worth while materials suggested to supplant this asphalt laminated paper product. In general use while they may be the equal or more efficient, yet price wise not only does the use of the asphalt sheet continue to grow but additional equipment for its production is being installed particularly in the Southern States. Many are adjacent to southern kraft mills.

In summation—here is a division of the fifth largest industry in the United States that prewar operated on limited tonnage to individual limitations, that brought together by a common purpose in the war effort, expanded their tonnage outlet triple fold and saw its collective tonnage decline post-war to a point of dire predictions for future industrial outlet. Yet now it keeps pace with the expanded parent industry through the installation of new producing converters while retaining former Mills almost 100 percent, truly a healthy condition within this division of the paper industry.

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Advances In Drying of Paper Coatings With Far-Infrared Radiant Heating

A Paper Trade JOURNAL Report*

The "color-blindness" and structural strength of Chromalox radiant heaters are two of the characteristics that have recommended these units for some critical applications in the drying of coated papers.

Although not new, radiant heating is a rapidly growing industrial tool and in several forms, it has been adopted as an efficient and reasonably-priced means of drying paper coatings. One vehicle of radiant heat that recently has achieved a number of remarkable drying successes, is electric far-infrared heating using the metal sheath heater.

Meaning of Far-infrared

Far-infrared is an old technical term used to distinguish the longer wavelengths of radiation from the conventional near-infrared radiation. Far-infrared radiation is produced by lower temperature heat sources, and its wavelength is "far" removed from the visible portions of the spectrum. Near-infrared radiation is produced by high temperature heat sources, and its wavelength is "near" to the visible portion of the spectrum. Sunlight is a typical example of near-infrared radiation.

It is this difference in wavelength that explains many of the differences in absorption. Near-infrared waves, for example, are transmitted through glass, water film or other transparent material. Far-infrared radiation, on the other hand, is absorbed (not transmitted) by glass, films of water, and other transparent material. This difference in the wavelength becomes important on such jobs as drying the printing ink on transparent films.

Dark colors (black especially) absorb sunlight and other near-infrared radiation almost completely, but white materials reflect large amounts of near-infrared. Thus, people wear light colored clothing in the summer months to reflect the sun's rays. Far-infrared, on the other hand, is absorbed even by white materials with negligible reflection. Almost all colors absorb far-infrared radiation with equal speed, and therefore are heated with almost complete uniformity. This may be important, for example, in drying wallpaper of many colors and patterns. Far-infrared radiant heaters are therefore called "colorblind" because they heat all colors of materials with practically equal speed.

This difference in wavelength has been put to commercial use for hundreds of years; in greenhouses, for example. Here the sun's radiation (which is near-infrared in wavelength) travels through the glass enclosure of the greenhouse, warming up the earth, etc., inside the greenhouse. While the earth and the flower beds, etc., are all warmed and in turn re-radiate, their radiation at lower temperatures is of the far-infrared wavelengths. This far-infrared energy does not escape through the glass enclosure but is trapped inside and develops higher inside temperature.

Far-infrared, therefore, is barely visible to the human eye. As a matter of fact, a far-infrared generator produces very little visible light. It is almost entirely radiated in the invisible portion of the spectrum. This property is also used to advantage in avoiding troublesome glare frequently encountered with the brilliant near-infrared generators. *Figure 1.* graphically illustrates the difference in wavelength.

Metal Sheath Heaters

An efficient way to harness far-infrared radiation and apply it to any one of a variety of jobs is in the form of tubular

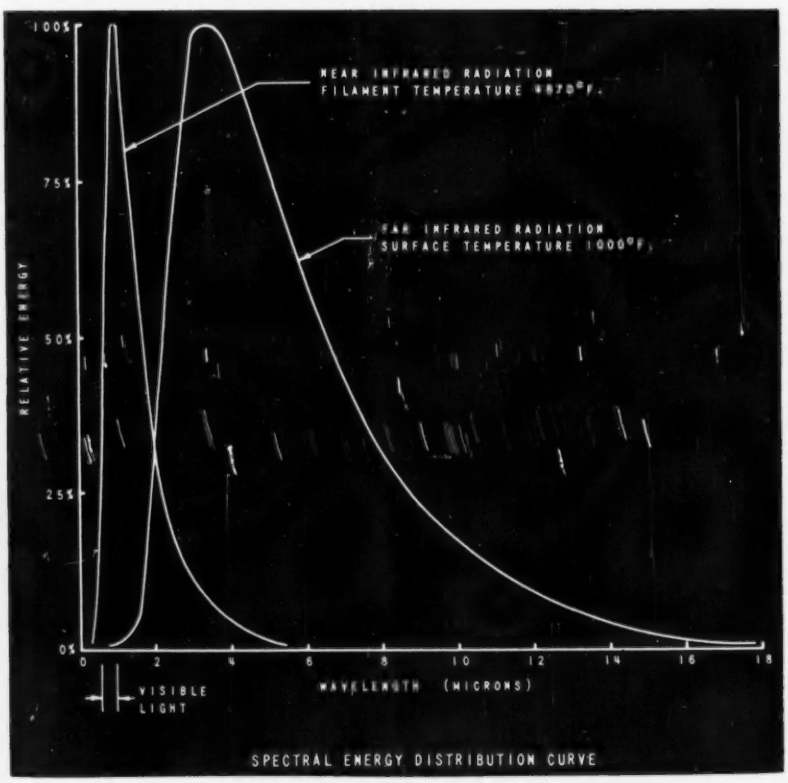

Figure 1

metal sheath heaters such as the Chromalox enclosed alloy-sheathed heating element made by the Edwin L. Wiegand Co. These elements are structurally rugged, being uneffected by direct contact with moisture or by hard blows.

When bent and mounted on panels, these elements can be mounted to spread intense far-infrared radiation uniformly over large areas. Several panels can be combined to form complete oven sections, with built-in insulation, bus, and frame.

The metal sheath heater operating at 1500 degrees F. delivers an electromagnetic wave length with maximum energy at 2.7 microns. At this temperature the source is capable of long continuous operation in any atmosphere or position. In panel mounting, the tubular heaters are available in sizes up to two feet by five and a half feet, and at a standard input intensity of 2.7 kilowatt per square foot.

Application to Paper Coating

The use of far-infrared radiant heat in the paper industry is by no means new. However, it has lately recommended itself strongly with the development of radiant panels and control equipment that permits infinitely variable temperatures.

An extensive application of radiant panels to form enclosed oven in three separate heating zones, was made recently on a triple coating operation manufacturing sensitized reproduction paper.

In several plants conducting extrusion laminating of polyethylene, it has been determined that better lamination results from heating the sheet before laminating. This action drives out moisture and prevents premature setting of the polyethylene. Also, penetration of the polyethylene is more complete between the hot fibers. Radiant panels have been found effective sources of the even and concentrated heat needed for this preheating job. After lamination, it is customary to post heat the sheet, again using radiant heat without contact for the purpose of improving the bond.

The panels have found further use as supplementary heat for calendering and embossing, as preheaters in drying clay coatings, and as ovens for curing resin impregnations.

Infinite Control of Heat

The average radiant heater job on paper converting cannot be controlled by a thermostat. When a thermostat is used on other applications, the bulb is placed in the heat transfer medium—such as air or a metal face. But on a radiant heater application, there is no heat transfer medium since the infrared rays go directly from the heater to the work, and the heat is generated on the work.

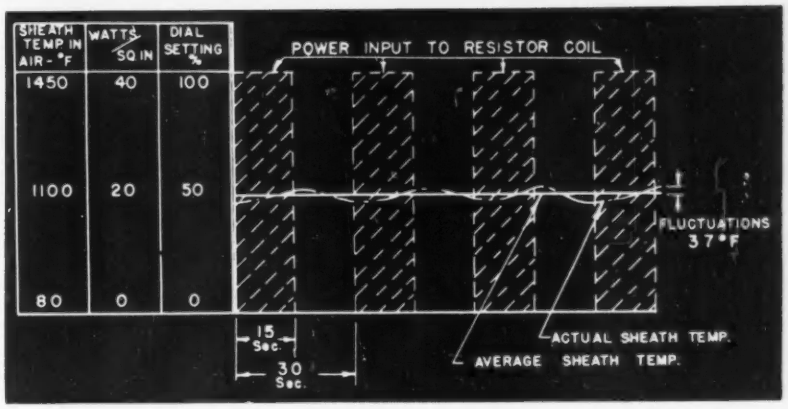

Figure 2

Input Controller

The most practical means of temperature control is with an input controller. This control permits the effective wattage of the heaters to be varied until the exact heating condition is reached.

The input controller is basically an adjustable ON and OFF switch that operates automatically through a self starting synchronous motor running at two r.p.m. The portion of the 30 second cycle that the switch is ON, can be controlled by adjusting the dial knob. The adjustment can be made in infinite steps. The operator merely dials to adjust the pulse of current to the heater to the percentage step that produces the desired constant temperature.

The temperature is maintained constant even though the resister coil inside the heater is energized in pulses, because the inertia of the heater causes the pulses to be smoothed out with a "flywheel" effect. This principle is visualized in *Figure 2*.

No current surges in the power line are involved in the use of the input controller, since the resistance of the heater remains constant under a maximum temperature fluctuation of only 37 degrees F.

When the controller dial setting is changed to a new percentage, it takes only about 4 minutes for a radiant panel oven to reach equilibrium in the new temperature.

As the setting on the input controller is reduced and the sheath temperature in the panel is consequently lowered, there is an accompanying decrease in the percentage of radiation. On most jobs this reduction will not be excessive. As shown in Figure 3., a reduction of only about two percent of the amount of radiation is noticeable throughout the entire temperature range of the sheath heaters. The indicated percentage dial setting of 75 (as shown in Figure 3) is usual for an in put of about 40 watts per square inch.

Where oven applications are extensive and number several panels, several input controllers can be used to give zone control of temperatures. Some jobs have been installed where several zones are involved on one paper coating operation. Here, where multiple and critical changes are involved, the input controllers can be replaced with thermocouple elements connected to a central console control station.

*Facts for this discussion were supplied by Edwin L. Wiegand Co.

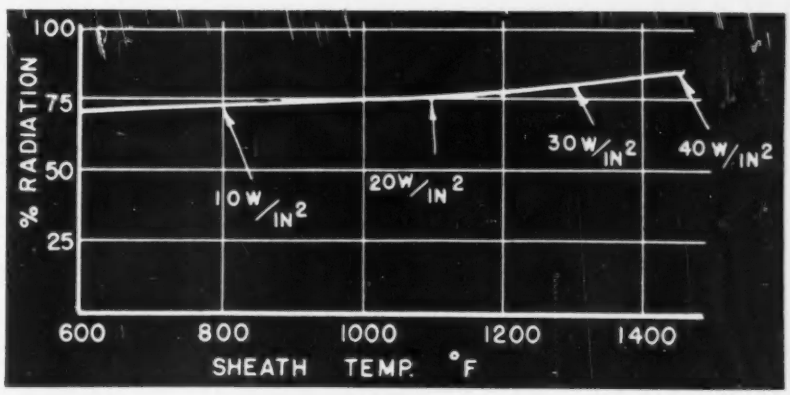

Figure 3

A New Box Plant To Serve Five States

For several reasons National Container chose Salisbury, N. C., as the site of its newest corrugated box plant. A big reason was the strategic location of the town.

Salisbury, N. C., is a town of slightly more than 20,000 population situated about 40 miles north of Charlotte. This area recommended itself in several ways to National Container Corp. as the ideal site for its brand new 152,000 square foot corrugated kraft paper converting plant, but one of the area's major assets was its central location within the area that the new plant was intended to serve. The plant site is actually located on the outskirts of Salisbury toward Spencer, N. C.

The plant is now providing corrugated kraft paper shipping containers and allied products to the markets in the five states of South Carolina, North Carolina, Tennessee, Virginia, and West Virginia. The distances are pretty well equalized from Salisbury to such market centers as Columbia, S. C.; Richmond, Va.; Chattanooga, Tenn.; or Charleston, W. Va.

The plant is equipped with fourteen truck-trailers that are used to cover the deliveries within an appropriate area. The location is so strategic that direct truck service to many customers can be extended out on a 200-mile radius from the plant in any direction.

The plant is also favorable located for economic receipt of its raw materials. It lies between National Container Corp.'s newest pulp and paper mill in Valdosta, Ga., and its Big Island mill in Virginia. The former mill furnishes the needed liner board, and the latter furnishes the necessary corrugated medium.

Official opening of this completely integrated, one-story manufacturing unit was announced October 8 by Samuel Kipnis, corporation president. Mr. J. W. Reynolds is general manager of the plant. It is the twenty-third corrugated box plant for National Container. In addition, the firm operates seven kratt pulp, paper, and board mills and two multiwall bag plants, with a third under construction at Valdosta, Ga. The company also owns 390,000 acres of timberland.

Large Corrugator

The heart of the new plant is its new streamlined 100-inch corrugating machine. This unit, made by S. & S. Corrugated Paper Machinery Co., is said to be one of the largest corrugators in the country. It consists of A, B, and C flutes, so that all grades of board can be made in Salisbury.

Among other features, the corrugator

WHAT'S THE BIG IDEA

Like any other supplier, we are naturally anxious to help you make better paper. But two years ago, we got a big new idea—to take extra steps to help you *sell* more paper. You know these extra steps as the MELOSTRENGTH Promotion Program.

By mail, advertising, publicity, radio, TV, and through personal calls by our field men on your customers, we have been telling the story of MELOSTRENGTH* Paper and the MELOSTRENGTH promotion to converters, jobbers and consumers. How's it going over? The idea has caught their imagination—the imagination that builds sales!

Here's what MELOSTRENGTH means to your customers—converters, merchants, distributors.

MELOSTRENGTH means better paper!

1. MELOSTRENGTH means higher strength both wet and dry—measured by tensile, burst or fold . . . greatly increases durability, inhibits linting, reduces color bleeding, and improves wet-rub resistance.
2. MELOSTRENGTH means softer, more absorbent fibers for napkins, facial tissues, towels, tablecloths, etc. . . . virtually eliminates fuzz.
3. MELOSTRENGTH means greater smoothness, improved fiber bonding, and better wax pick.
4. MELOSTRENGTH means better printability because of improved surface characteristics and because it provides increased dimensional stability, and less curl.

MELOSTRENGTH means easier selling!

1. MELOSTRENGTH gives your customers' salesmen an extra talking point. It has become a recognized symbol of quality in paper products—quality that gives the little extra nudge of confidence that helps put over more sales!
2. MELOSTRENGTH pre-sells all along the sales pipeline. Cyanamid's Promotion Program is building wide consumer acceptance through radio, TV, magazine and newspaper publicity and advertising.

This promotional selling is a valuable added ingredient, an extra quality that is helping many papermakers expand their markets. For a current report on the progress of the MELOSTRENGTH program, and how you and your customers stand to benefit by participating today, drop us a line.

*Trade-mark

AMERICAN Cyanamid COMPANY
PAPER CHEMICALS DEPARTMENT
30 Rockefeller Plaza, New York 20, N. Y.

In Canada: North American Cyanamid Limited, Toronto and Montreal

HOW TO ELIMINATE STOCK CONTROL HEADACHES

Today costly stock control problems can be eliminated, and better finished paper obtained quickly, easily and economically, by installing a Poirier Dual Control.

The Poirier Dual Control, with its 4 separate and distinct controlling actions, regulates both stock volume and stock consistency, up to 400 tons per 24 hours. Not only is consistency controlled to within (±) 1/10 of 1%, basis weight (±) 2%, but it is proved under test that volume is also regulated, even when stock becomes too light to be controlled by consistency.

Among the many other advantages of the Poirier Dual Control are homogeneous stock conditions, by elimination of stagnation, settling and water film; controlled stock chest (all stock is used); uniform machine conditions; saving in labor; only one simple adjustment and can be operated by remote control.

Operation of the Poirier Dual Control is not dependent upon stock samples, remote arrangements, or is it subject to inaccuracies from outside variables. By a series of restrictors, gates, etc., consistency is automatically controlled by increasing or decreasing water dilution. Volume is automatically controlled by regulation of the hydrostatic Head. When stock becomes either dilute or heavy, and consistency cannot be controlled by water, the exit orifice is automatically increased or decreased to maintain proper basis weight — as stock goes on wire. With most controls, this is usually impossible.

It will pay you dividends as it has so many other pulp and paper manufacturers, to find out how a Poirier Dual Control will help you. Without obligation on your part, one of our engineers will study your operation and furnish you with complete recommendations on how you can eliminate your stock control headaches.

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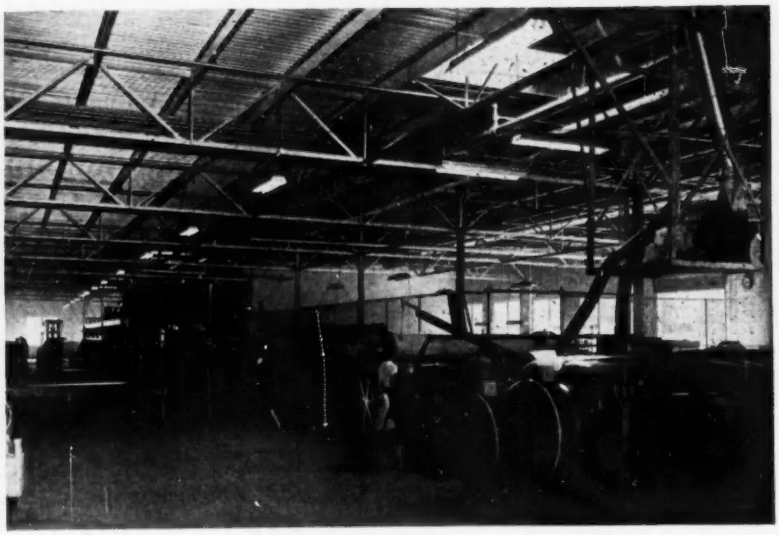
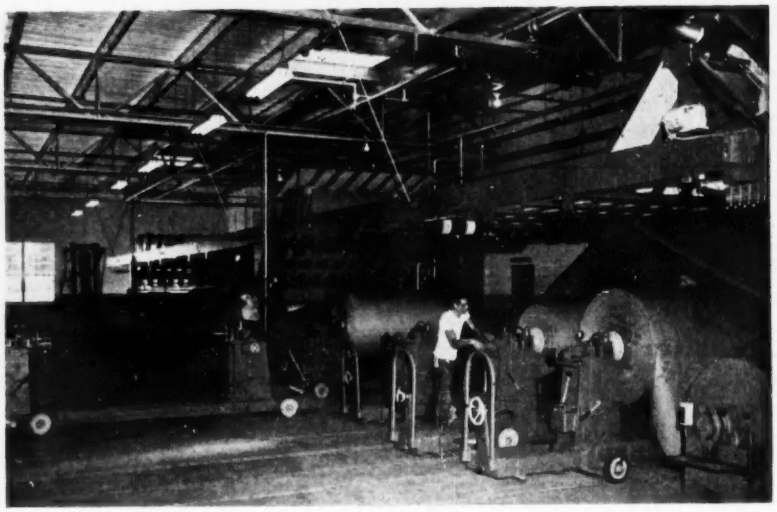
Specialists in Stock Control Equipment



Front end of the corrugator.



Back end of the corrugator — roll stands.

has a 50-foot heating section and a 50-foot drying section on the double backer. It is also provided with a 100-inch double cut-off, and a 100-inch modern Universal sheet take-off.

Other Equipment

Five two-color presses will handle the printing of the liner board. Three presses are 184-inch, one is 105-inch, and one is 87-inch.

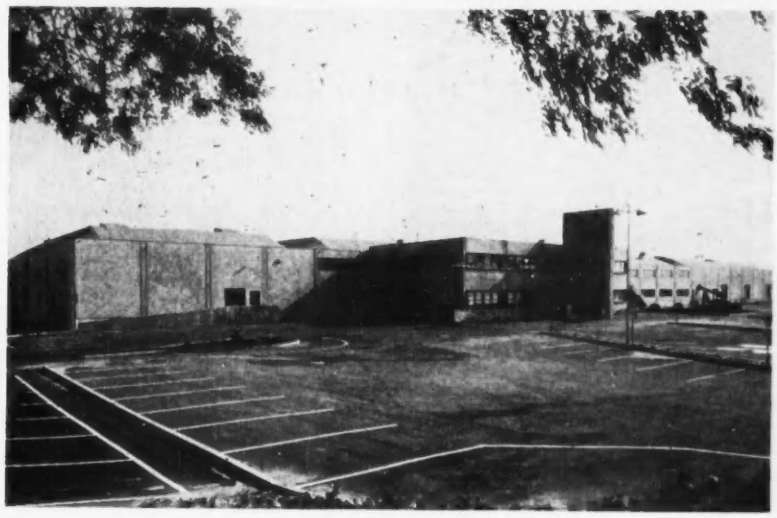
The Finishing Department is equipped with sufficient taping and jumbo stitching machines to handle all grades and sizes of board.

Materials handling equipment is the latest available. The interior of the plant is partially conveyorized, and more conveyor units are planned for the near future. New Clark trucks have been obtained for handling and stacking jumbo rolls of paper. Special roll-grabs enable the trucks to stack the rolls vertically.

Shipping facilities are extensive. The trailer-truck loading dock has spaces for accommodating ten units at once. The railroad siding is long enough to hold as many as fifteen freight cars. A four-lane highway runs by the plant and facilitates fast departure and arrival of truck shipments.

Other plant facilities include all-fluorescent lighting and a modern, oil-fired steam boiler. Rest rooms with showers are provided for employees. Twelve large ventilating fans change the plant air completely every ten minutes. A stainless steel equipped cafeteria handles up to 65 people at one time.

The DRAPER Felt
DRAPER BROTHERS COMPANY
CANTON, MASS.



New Bemis Bag Plant

Bemis Bros. Bag. Co. late this fall began full production at their new plant at Wilmington, Calif. This plant replaces an older and much smaller plant which had been in operation for 22 years. The new plant will produce multi-wall bags and paper specialty items.

Reinforced concrete construction was used in erecting exterior walls and major wall partitions of this 125,000 sq. ft. building. This area includes the 10,000 sq. ft. two-story office wing and a 9,000 sq. ft. mezzanine area, providing space for office, cafeterias, etc.

The building is divided into four major sections, separated by firewalls, and is completely sprinklered. These sections are: receiving, manufacturing, shipping and offices. Size was dictated by the primary function of material flow, i.e., receiving to shipping by the shortest distance between two points.

Bays are 20 x 40 feet with a minimum clearance of 20 feet under trusses, major building size is 200 x 530 feet.

Locker and wash rooms are on the main floor out of the manufacturing area and will accommodate 150 percent of the present number of employees.

An unusual feature in design was to allow the floor, which is at truck height, to slope seven inches in 100 feet to follow somewhat the fall of the land. (In lowland L. A. fill material is at a premium.) With machines varying from 20 feet long presses to 75 feet tubing sections, this has been found to be quite practical.

The lighting takes advantage of the long daylight hours by 71 skylights in the roof which on many days gives an intensity in the manufacturing area of 30 foot candles. Artificial illumination is provided by rapid start fluorescent lamps.

The power service distribution is by bus duct supply. A modern air conditioned cafeteria is located on the second floor. This is used for large group meetings featuring safety and recreational activities.

The office is oversized and provides two floors 50 feet by 100 feet with year-'round air conditioning. Interior walls and partitions are birch veneer with accoustic tile and flush lighting fixtures. Tile floors cover a flexible electric supply and communication system.

New Fibreboard Box Plant

Fibreboard Products, Inc., announces that the company has purchased fourteen acres of property in the southern part of the city of Denver, Colo., from the Santa Fe Railway as the site for a new carton plant. Construction will start immediately.

It is expected that this will be only the first move in an important expansion plan for that area, and the plant should be in production within a very few months.

The initial plant building to be erected will be a modern one-story building, covering 30,000 sq. ft. designed to be readily enlarged as more space is needed. When the plant gets in production, one of the first items to be manufactured will be Pure-Pak milk cartons. For this purpose, Ex-Cell-O converting machines and prefold gluers have been ordered. These machines will equip the plant to manufacture all sizes from half-gallons to half-pint milk cartons.

Fibreboard manufactures their own kraft board in their San Joaquin Division on the Pacific Coast, and this board will be shipped to Denver for conversion. At a later date, other types of paperboard products will probably be converted at the new plant.

L. M. Brantley, who at present is superintendent of the Carton Department of the company's San Joaquin Division, will assume the position of plant manager and superintendent of the Denver plant. Mr. Brantley is an experienced carton man and has been an employee of the company since 1935.

NEW CONVERTING EQUIPMENT AND SUPPLIES

Air Cushion Device for Easier Paper Cutting

The Lawson Air Cushion Device consists of a series of ⅜" diameter air valves embedded in the machine table of a Lawson paper cutter. The valves are fitted with special nylon closing devices which, when depressed by the lift of paper, permit streams of air to escape. Thus, when a large heavy lift of paper is placed in the machine, it is actually floated on a "live cushion of air." This enables the operator to turn and manipulate heavy loads faster and more easily. The unit is a development of the E. P. Lawson Co., 426 West 33rd St., New York 1, N. Y.

The air is piped from the compressed air source to an air purifier and regulator which is fastened on the back of the left housing of the machine. (It is assumed that the customer has an air compressor or air line on the premises.) The air then goes into a three-way electrically operated valve. One of the valve openings leads to the regulator, one to the table valves, the third is an exhaust.

The actual amount of pressure used in operation depends on the weight of the paper. The average load will require from 15 to 20 pounds of pressure, which is easily adjusted by turning the handle on the regulator.

Whenever the back gauge moves forward under power, or when the clamp comes down just before the cutting stroke, the air under the lift of paper is released through the exhaust valve. At all other times the air is supplied to the table. In other words, the air cushion is in operation only when the operator needs it to help him move the lift of paper by hand.

The device is furnished as optional equipment for the 46" and 52" Lawson Heavy Duty Hydraulic Clamp Cutters and Lawson Electronic Spacer.

On the 46" and 52" sizes, the cushion device consists of 20 valves. On the 52-T-76 model (back table extended to accommodate sheets up to 76" in length) the device consists of 28 valves.

The device can also be applied to the side extension tables, if desired, to eliminate the effort required to slide the cut work for further processing.

Roll Sealer for Taped Closures

The Roll-On-Sealer rolls on gummed tape in one continuous operation, making enclosures on a variety of packages — cartons, boxes, rolls, bundles, etc. Pack-Rite Machines, 407 E. Michigan St., Milwaukee, Wis., are now national and export distributors of this sealer.

An advantage of this sealer is that it can now be used for reinforced tape (nylon, rayon—sisal, etc.) as well as for the more commonly used kraft tape. For kraft tape, when the desired length of seal is reached, the sealer is given a slight twisting movement and a serrated blade makes the cut without waste of tape. For reinforced tape, the serrated blade is replaced by a sharp, razor steel blade. Change from one blade to the other is done in a few seconds by removing two screws.

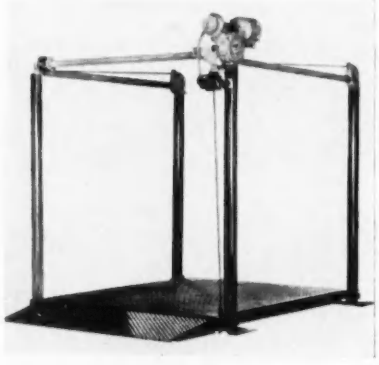
In operation, the unit moistens, applies, measures, and cuts off tape as the sealer is pulled over the area where a seal is desired. The sealer will dispense tape to any length, either horizontal or vertical, over flat joints or at edges and in just the right length, it is said.

The machine is stainless steel and weighs only 2½ pounds without tape. Any width of tape up to 3 inches may be used. The sealer will hold a full 600 foot roll.

When sealing, the tape feeds direct from the roll and is moistened as it passes over the sponge roll. As the tape leaves the sealer, a soft rubber roll applies pressure to make a firm seal. Pressure from this roll removes air bubbles and eliminates finger rubbing.

Water is automatically fed to the sponge roll from a built-in receptacle which delivers just the right amount of water for moistening the gum.

Can be operated in any position, it is said.



Electric Lift Requires No Special Foundation

Globe Hoist Co., Industrial Div., E. Mermaid Lane & Queen St., Philadelphia 18, Pa., has just introduced the addition of the Globe Electro-Loader. Among the major advantages claimed by the manufacturer is the ease with which this lift may be installed. Because no ground excavation or special foundation is necessary, the unit may be placed on upper floors, temporary locations, driveways, or almost any location where loading and materials handling service is needed.

Lifting power for the device is supplied by an electric motor operating a simple cable mechanism which raises the checkered steel plate platform to an above-floor height of 5 feet 10⅜ inches or any intermediate level. The platform

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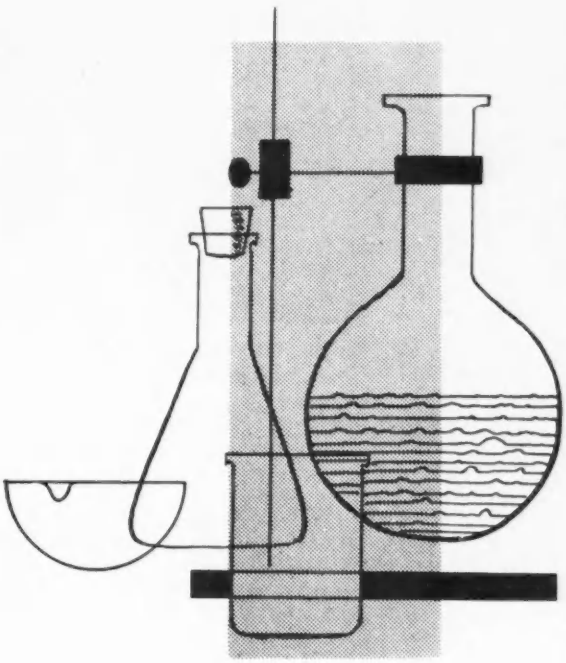

The quality being built into Appleton Felts today is predicated to a great degree on the work of a nationally recognized independent research organization. It is a service designed to help solve all of your felt problems.

...and Appleton Felts make good paper!

APPLETON WOOLEN MILLS
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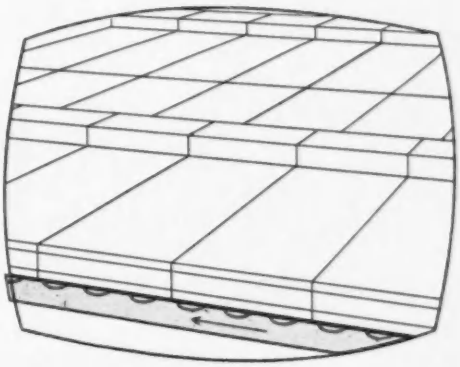
A NEW PROVED WAY TO BOOST ON-MACHINE COATING CAPACITY

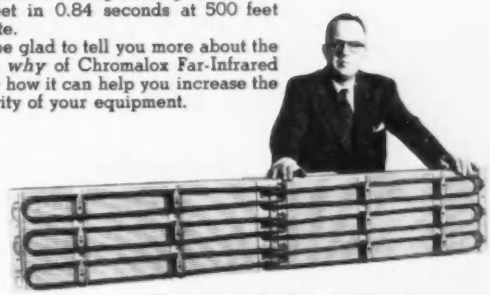


CHROMALOX Far-Infrared PANELS

Speed up on-machine coating capacity and avoid rewinding! Chromalox Electric Far-Infrared Radiant Panels heat-set coating *without contact* and eliminate picking.

One mill is setting coatings on 200-inch paper, on machine, at 600 feet per minute with an exposure time of two seconds. Another mill is setting coating on 30-lb. basis sheet in 0.84 seconds at 500 feet per minute.

We'll be glad to tell you more about the *how* and *why* of Chromalox Far-Infrared and show how it can help you increase the productivity of your equipment.



CHROMALOX Far-Infrared Panels are heat powered with shockproof, splashproof metal-sheathed tubular elements. Panels up to 24" x 66" can be grouped to radiate high intensities uniformly over the widest webs. Output is variable from 4 to 100%. Mechanically and electrically complete, ready to install on circuits up to 600 V.

CHROMALOX *means Electric Heat at Its Best!*

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It gives complete details on Chromalox Far-Infrared Radiant Panels and controls. Write for your copy NOW.

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☐ Have a Chromalox Application Engineer contact me.

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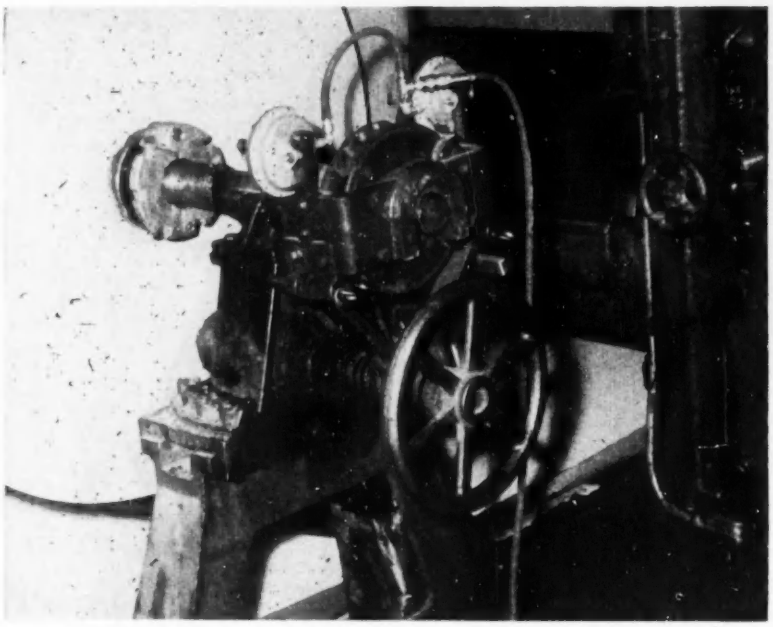
is reinforced by steel beams to stand up under impact loads of power-operated trucks. An upward loading slope to the 4⅜-inch high platform is provided by a 24-inch wedge-shaped ramp.

For accurate control and safe operation, the loader has been equipped with adjustable automatic top and bottom limit stops, centrifugal governor and safety brake, plus a slack cable shut-off. Currently featured are one standard and two special models which the company claims will meet almost all installation requirements. Custom-models built to meet unusual requirements, including caster-mounted types for quick portability, are also available.

More information is contained in Bulletin I-202, available from the manufacturer.



Unwind Stand Brake Controlled from Air Panel

A new line of air operated brakes has been announced by the Horton Manufacturing Co., Inc., 1179 15th Ave. S.E., Minneapolis 14, Minn. The brakes are designed for use on converting equipment and are adaptable to any existing type of unwind stand. The brakes are air cooled and have a torque range of from 3000 to 18,000 inch lbs.

On multiple unwind stands of sheeters, pasters, etc., these brakes can be jointly controlled by one man through a Horton air panel mounted at the front of the machine so the operator can watch product quality.

The air panel is made in single or multiple units depending upon its use. The outstanding features of the panel are a precision regulator giving accurate control from 0 to maximum air pressure and a solenoid operated exhaust valve connected in series with an indicator light, telling the operator when the air circuit is closed and equipment is in operation. The panel is made for side mounting with removable front and back panels for easy installation and maintenance.

Chemical Agent To Eliminate Static

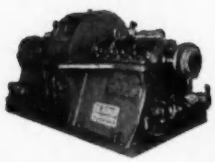
A chemical anti-static agent has been developed to relieve static trouble in the handling of transparent plastic film as well as paper webs. Known as Statikil, the chemical is a product of Statikil Div., J. E. Doyle Co., 1220 W. Sixth St., Cleveland 13, Ohio.

The chemical is harmless, it is said, and is used full-strength for prompt and durable static freedom. It is available in pressurized cans for spraying on the job.

The manufacturer also reports that one user, a producer of transparent plastic window signs, sprays the chemical through power nozzles onto all of the sheet plastic as it comes from rolls on the first operation.

In this particular window sign operation, the anti-static agent on the film also acts as a permanent dust repellant on the finished product, it is said.

proven by performance

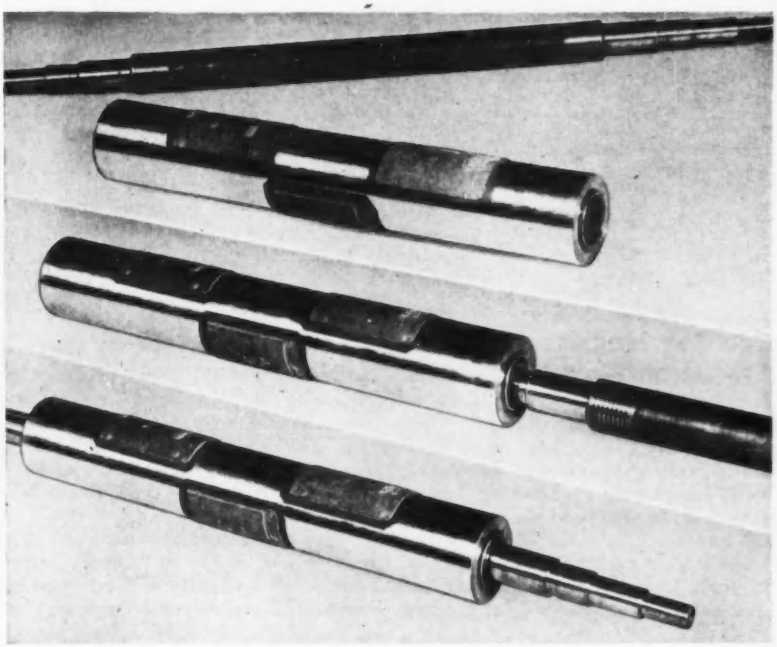


The Sutherland Refiner complete continuous Beating and Refining Systems.*

SUTHERLAND REFINER CORPORATION

*U. S. Patent No. 2,654,295

TRENTON 8, NEW JERSEY



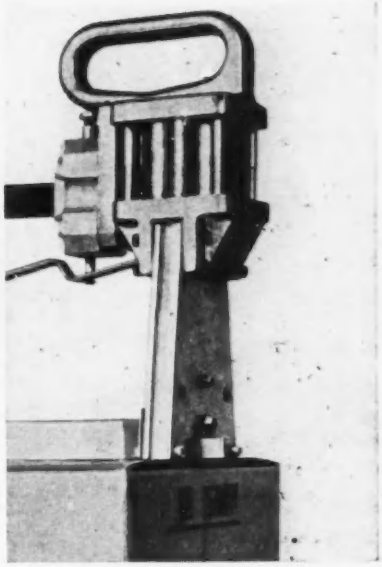
New Type Rubber Plate Cylinder

A new and different type of rubber plate cylinder assembly, said to combine the accuracy of integral-shaft cylinders and the economy of demountable cores, has been developed by Mosstype Roller Co., 33 Flatbush Ave., Brooklyn 17, N. Y. The new cylinder, which is called "D-Mount," is an assembly of lightweight magnesium sleeve and special steel mandrel (press shaft) that the printer "integral-izes" in his own shop by a shrink-fitting procedure. At the end of a run the sleeve can be removed from the mandrel by reversing the assembly procedure, thus freeing the mandrel for use on another job and permitting the sleeve to be stored away with plates still mounted in position for future re-run.

A number of advantages are claimed for the new cylinders. Since they cost less than conventional shafted cylinders, they enable the rubber plate printer to keep more jobs standing, it is said. According to the manufacturer, after three or four re-runs of an average job kept standing on these cylinders, the savings in plate-mounting costs and longer plate life have been found to pay for the original cost of the sleeves, also, the cost of the sleeves is such as to permit the printer to carry a wider range of printing repeats.

This type cylinder is assembled by applying heat to the ends of the lightweight magnesium sleeve by means of special electric expanders. The procedure widens the bore so the steel mandrel may be inserted into it and properly positioned. After a brief cooling period the bore shrinks to a grip-fit on the mandrel and the cylinder is press-ready. In disassembly the sleeve ends are again heated so the mandrel may be withdrawn.

The cylinder, on which patents are now pending, is available both to converters who mount individual plates and those who use continuous design rollers. An illustrated brochure is available from the manufacturer.



Air Stapler Closes Full Carton from Outside

Container Stapling Corp., 308 N. Park Ave., Herrin, Ill., has developed the Model PA Carton Stapler for stapling filled corrugated or fiber board cartons from the outside. Designed by company president Schafroth, the stapler is pneumatically operated and uses large size industrial staples.

The machine has a stainless steel chassis and chrome plated wearing surfaces. It weighs 9½ pounds and has a magazine capacity of 100 staples. A 200-staple magazine is available at additional cost.

Air requirements are listed as 50 to 60 p.s.i. and 19½ cubic inches per staple driven. The machine is recommended for use with following anvil sizes: No. 7 for shallower penetration than average (C flute cartons); No. 8 for average

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Sutherland Inc. Pressure Washing*
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PRESSURE WASHING

SUTHERLAND REFINER CORPORATION
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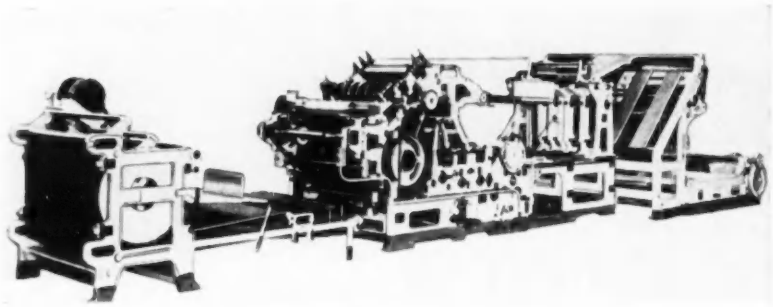
*U. S. Patent No. 2,355,091

depth penetration (A flute cartons); No. 9 for deepest penetration, used with ¾-inch leg staples for double walled A flute cartons requiring deeply penetrating anvil and longer staple leg length.

Label Gluer Uses Ungummed Labels

The Glue-Fast Equipment Co., Inc., Dept. P.T., 11 White St., New York 13, N. Y., is now in full production on the BX Model Label Gluer. This device is said to offer a solution to users of messy glue-pots-and-brushes type application of labels on a large scale. By changing to ungummed labels, costs can be cut nearly in half, it is claimed.

The new gluer features one-hand operation and minimum maintenance consisting only of an occasional rinse. The unit is chrome-plated, has a lift-off cover (D, above), an adjustable guide-bar (E), and heavy die-cast glue reservoir (A) that holds sufficient glue for several hundred labels in one filling. Two serrated brass rollers (B & C) carry the liquid glue in proper consistency to the underside of labels up to 6 inches wide. Larger 9-inch and 12-inch all bronze models are also available.

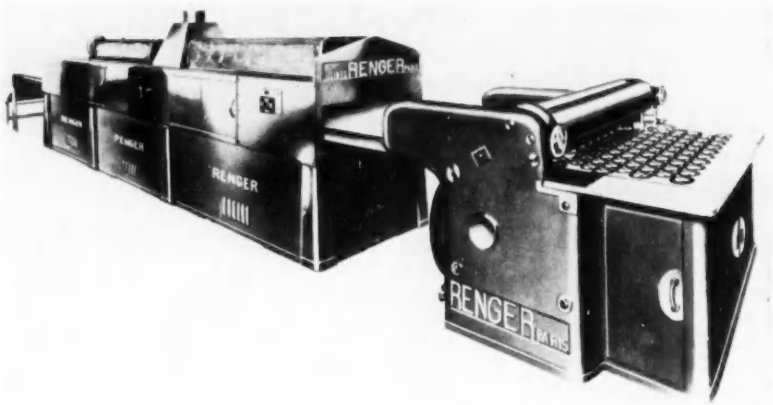


Can Bag Machine

Potdevin Machine Co., 285 North St., Teterboro, N. J., has recently developed the Model 17 Can Bag Machine. This machine makes a variety of sizes of satchel bottom bags up to 34 inches long by 48 inches wide by 21 inches bottom width. It has a mill roll width of almost 100 inches.

The bags converated on this machine are made from two webs of material: a kraft web, forming the body of the bag or tube, and a chipboard web for the bottom of the bag. These bags are designed as lightweight, disposable shipping containers for the packing and shipping of empty waxed milk cartons, spirally wound tubes and containers, and tin cans.

According to the manufacturer, this bag machine is the only model in existence that will make this type of bag complete in one automatic operation.



French Varnishing Unit Now Available in U. S.

H. E. Overacker, 17 Battery Place, New York, N. Y., has been appointed sales agent in the U. S. for the Universal Varnishing Machine and other converting equipment made by Usines Renger of Paris, France. The varnishing machine is known as type VV/IR and is equipped with an automatic dryer.

Other equipment from this manufacturer in the agent's string includes machines for gluing, coating, bordering, tube winding, and tube cutting.

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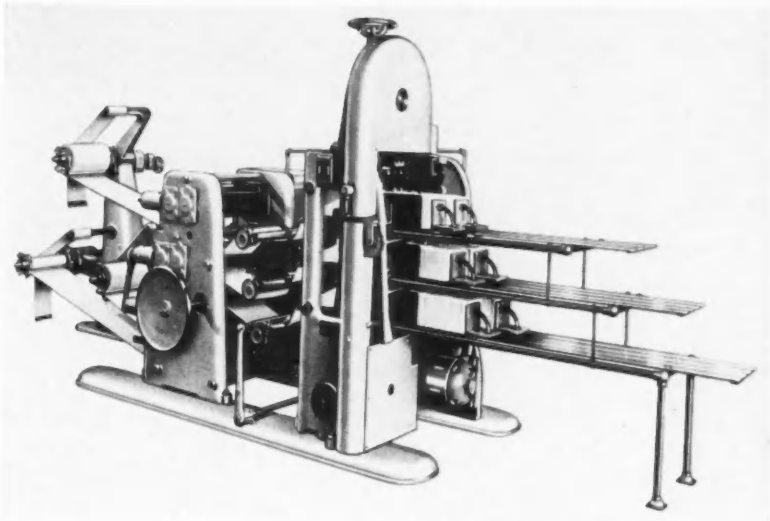


Three-Unit Embosser for Use With Napkin Folder

Recently developed by Hudson-Sharp Machine Co., Green Bay, Wis., is a three-limit Embosser to be used with a standard napkin folder. The unit shown above is a Model 4-E unit on a 2-A Special Napkin Folder.

According to the manufacturer, the purpose of having three embossers is to accomplish fine, clear embossing on very shallow designs, particularly damask type and also to add sheen to the finished napkin. Normally, three webs are run through one pair of embossing rolls, but to accomplish such a design as the damask, as is currently becoming popular, it is necessary to run only one web through a pair of embossing rolls at a time. Consequently, in order to build up production (most machines require three webs) the new three-in-one embosser was constructed.

Bottom Feeder Uses Gravity and Mechanics

The Staude Timed Bottom Feeder is now available as an accessory to the firm's Master Gluer. The equipment is manufactured by the E. G. Staude Manufacturing Co., Inc., 2675 University Ave., St. Paul 14, Minn. It feeds blanks by utilizing both gravity and mechanical actuators.

According to the manufacturer, this machine is particularly adapted to handling awkward or slippery blanks. A special feed gate and metering wheel are said to eliminate the need for fanning the stock. The device is claimed to insure positive timing without danger of jam-ups, doubles, and skips. The feed rubbers are easily replaced, it is said.

The principle of bottom feeding is also claimed to eliminate friction marks on the printed surface of the blanks. The blanks are fed flat and enter the timing section positively, regardless of the grain direction. This feature, according to report, adapts the feeder for cartons that are foil laminated, grease-proof laminated, waxed, coated, and for cartons that are normally difficult to feed because of extreme cuts and cutouts.

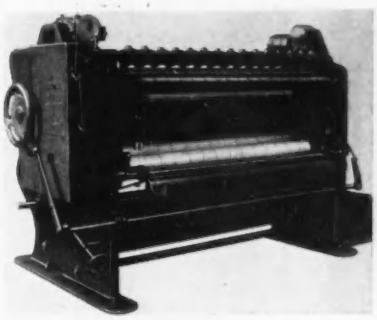
The unit allows for quick changeover from single to double feeding.

Special Adhesive for Envelope Front Flaps

A resin gum adhesive known as Res-N-Seal is now being offered for use on the "front seal" or flap of envelopes. Producer of the product is Paisley Products, Inc., Div. of Morningstar, Nicol, Inc., 630 W. 51 street, New York 19, N. Y. The manufacturer claims that the adhesive is absolutely non-curling and produces "lay-flat" envelopes that feed smoothly into printing presses.

Described as perfectly pliable with no hard crystals of glue, the material is offered also as an adhesive for gummed label stock and coin wrappers.

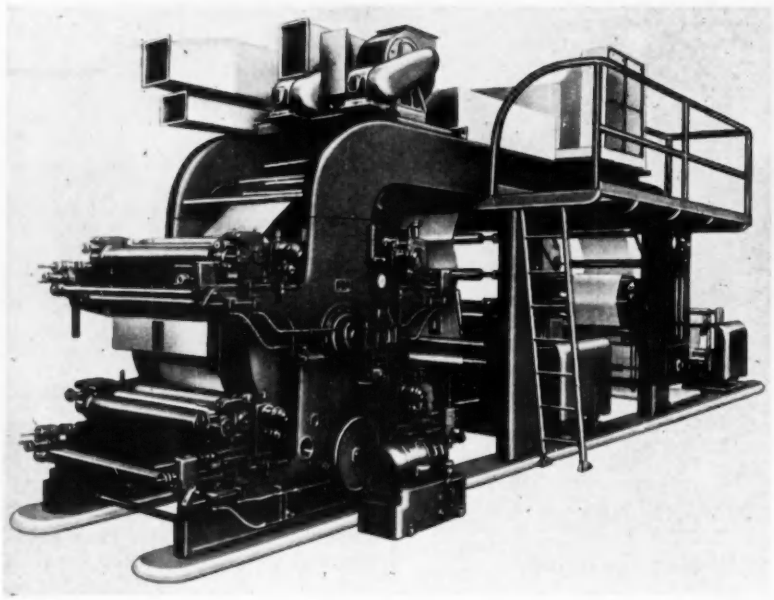
It is reported that envelope imprinting presses can be run up to around 24,000 units per hour when operating on envelopes employing this gum. A further claim is that these envelopes will stay flat through extended storage and will resist "blocking" even in an atmosphere of 100 percent relative humidity.



Toilet Roll Winder For Softer Grades

The No. 60-B Automatic Toilet Roll Winder has been developed by Hudson-Sharp Machine Co., Green Bay, Wis., for standard operation but particularly for winding softer tissues and facial tissues of two or more plies.

The machine is completely automatic and is built in any of the standard widths. It is claimed that the machine will produce upwards of 30 cases per hour, depending upon its width.



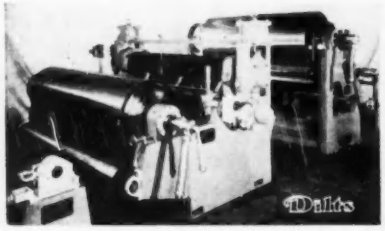
Flexographic Press for Flexible Films & Papers

The Model A-4 Flexographic press, manufactured by Hudson-Sharp Machine Co., Green Bay, Wis., is said to combine high speed with accurate register color printing on all types of flexible stretchy papers and materials such as polyethylene, vinyls, plastic films, etc.

Construction embodies a single 60-inch diameter impression cylinder around which is mounted one to four color stations. In operation, the web locks around the cylinder, making it practically impossible to print out of register. The press is offered in any width from 20 inches up to 50 inches with print repeats from 12 inches to 36 inches.

The press is also available with six color stations mounted around a single 83-inch diameter impression cylinder. A similar press called the Model A-5 is identical in operation but smaller in size, having four color stations mounted around a 36-inch diameter cylinder.

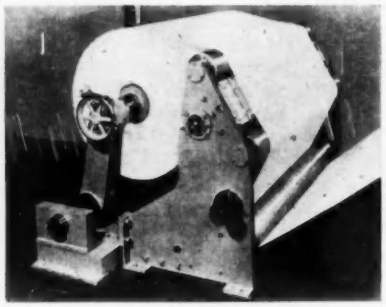
Complete specifications are contained in a new 28-page catalog, obtainable from the manufacturer.



Heavy Duty Waxing Machine, High Speed

Shown above is the recently developed Dilts 2-Roll Heavy Duty Waxing Machine. It is installed with unwind, preconditioning roll, 2-roll waxing section, a double shell cooling roll section, and wind-up. The machine is available from Dilts Machine Wks. Div., Black-Clawson Co., Fulton, N. Y.

Waxing section consists of 14-inch dia. rubber roll and same size chilled iron pick-up roll. Large air cylinders supply heavy nip pressures. Wax pan is coded.



Shaftless Surface Unwinder in New Model

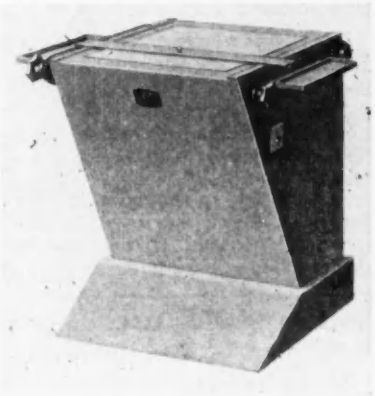
The Model 690 Shaftless Surface Unwinder was developed by John Dusenbery Co., Inc., 271 Grove Ave., Verona, N. J., as an unwinder for the firm's cigarette paper slitter. It was, therefore, engineered for speeds in excess of 2500 f.p.m.

The unit is designed to eliminate as much manual labor as possible. Its hydraulic circuit consists of a pumping unit mounted on a 29 gallon tank with an output of 1000 p.s.i. at 2.8 gallons per minute. This pressure is necessary to operate the hydromotor when lifting the roll off the floor and swinging it over into a vertical position.

As the arms supporting the mill roll swing over to the vertical position, a micro-switch is actuated which operates a pressure regulator, reducing the pressure to 200 p.s.i. so that the roll can be lowered against the driving belts with this pressure.

It is said that one man can remove the empty core, pick up a full mill roll, move it into position, make the necessary splice, and start a new run — all this in less than five minutes.

Specifications on the machine list a mill roll capacity of 4000 pounds, 42-inch diameter, width of 84 inches, core size 3-inch I.D.



Layout & Stripping Table

Bar-Plate Manufacturing Co., Orange, Conn., has developed the Slimline Layout-Stripping-Lineup Table for use with offset printing presses. The table is 20 inches by 24 inches.

The table was designed with attractive appearance in mind, so that it could be tastefully installed in either the printing plant or the front office, according to the manufacturer.

The table provides knee and foot room at the front for maximum working comfort while either sitting or standing. It is constructed of 16 gauge cold roll steel to provide a steady working surface.

The manufacturer states further that for maximum diffusion of light ¼-inch plate satin ground glass is utilized. The fluorescent lighting system is designed to keep the working surface cool under all conditions and to eliminate glare, shadow, and hot-spot free illumination. The interior of the light box is finished in white enamel.

The table has an easy-riding horizontal straightedge, which may be manually moved into position or position by a vernier control.

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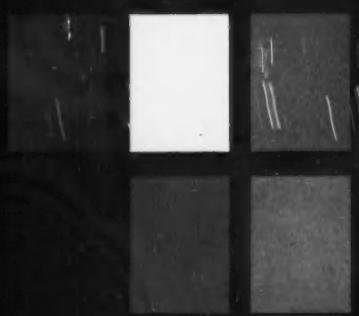

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NEKOOSA-EDWARDS again SELECTS C-E

This time it's another C-E Recovery Unit, the second to be ordered for the Nekoosa, Wisconsin, plant of the Nekoosa-Edwards Paper Company. To help meet the growing demands of expanding sulphate operations, this new C-E Recovery Unit has been designed to burn 1,050,000 lbs of dry solids per 24 hrs, and produce steam at a pressure of 500 psi and at a temperature of 700 F.

The selection of C-E equipment for Nekoosa is nothing new. In fact, it simply marks another milestone in the relationship between Nekoosa-Edwards Paper Company and Combustion Engineering — a relationship which dates back thirty-six years to the time when NEPCO first bought C-E equipment. Since then C-E has supplied stokers and coal pulverizers, has modernized existing power boilers, has received orders — and reorders — for new power boilers and has furnished one of the first spray type recovery units to go into service in the paper industry.

The consistent selection of C-E equipment by this leading pulp and paper manufacturer is a record of which Combustion Engineering is particularly proud. Such preference is indeed significant and... when coupled with the fact that leading pulp and paper manufacturers have consistently ordered and reordered C-E equipment . . . it points unmistakably to sound design and efficient, reliable and economic performance.

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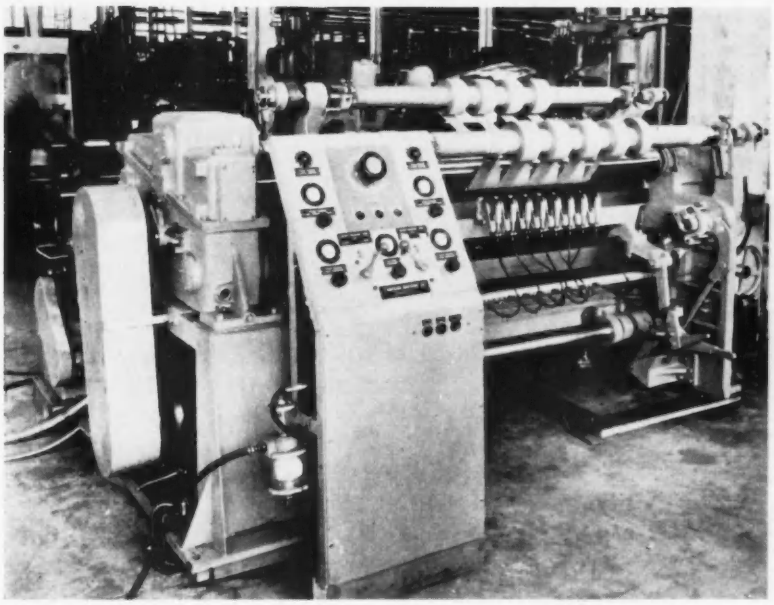
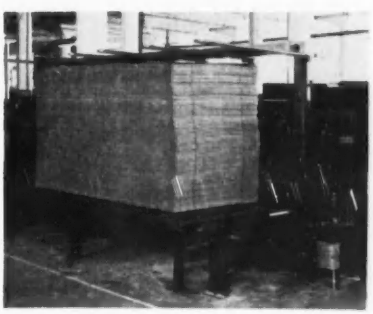


Slitter-Winder Provides Three Types of Cutting

Cameron Machine Co., 61 Poplar St., Brooklyn, N. Y., is now manufacturing a new, high speed, multi-purpose slitting and roll winding machine for use in the converting industry. It is said that for the first time in one machine, the Model 500 has provisions for shear-cut, score-cut, or razor type slitting, adapting the machine to the slitting method best suited to various materials. This choice of slitting methods is particularly useful for rapid changeovers among such varied production as rolls of plastics, foil, paper, fabrics, or laminated materials.

The machine is capable of running at speeds up to 2000 feet per minute and can be built to trim parent rolls up to a 62-inch width. It has rewind capacity of 20 inches diameter and can be equipped with a built-in constant tensions and electric side register control.

Other features of the slitter-winder are the sensitive automatic controls, which avoid the guesswork associated with hand set adjustments. Both the rewind roll contact pressure and the rewind core friction are air controlled to provide good density control of the rolls throughout the winding cycle.



Stock Turnover Unit

Greene Line Mfg. Corp., 1301 W. Nelson St., Marion, Ind., has recently perfected the Turn-O-Matic, which is a sheet turnover machine designed particularly for handling double-face corrugated sheets during the box making operation.

The machine is a frame device with fork arms that form a hydraulically operated rack. Lower fork arms fit down into a roller conveyor on one side of the frame. When a stack of board sheets is rolled over these arms, the two center forks in the upper set of arms can be lowered to grip the load. The racked load turns on a central shaft through an arc of 180 degrees from one conveyor line to another.

The machine replaces manual turning of double-faced board sheets ahead of a printer-slotter and again, after printing, in preparation for taping or stitching the inner face.

Upstroke Bailing Press

Now available for use in the corrugated paper and set-up box trade is the Loeser Upstroke pit baling press. This machine is made by E. W. Loeser Co., 1352 Genesee St., Buffalo 11, N. Y.

A unique feature of this press is its hydraulic-mechanical drive, employing a fluid drive and coupling between the motor and speed reducer which serves to minimize shock and strain and therefore vibration, it is said. The motor attains full speed which increases pressure as the bale nears completion. The press also allows bulky material to vent before final compression, making a tighter bale.

Automatic Tying Machine For Wide Applications

Available for sale or for five year retal, the new Inland-Union Automatic Wire Tying Machine is offered for a wide range of wire tying applications. The unit is a product of Inland Wire Products Co., 3947 S. Lowe Ave., Chicago 9, Ill.

The machine is offered specifically for bundling newspapers, magazines, knockdown corrugated or fiber containers; shook, rags, etc. The wire twisting unit is easily accessible for quick adjustment, and wire tension is mechanically controlled. Automatic pusher feeding can be adapted to this machine to further its efficiency, for certain types of work, it is said.

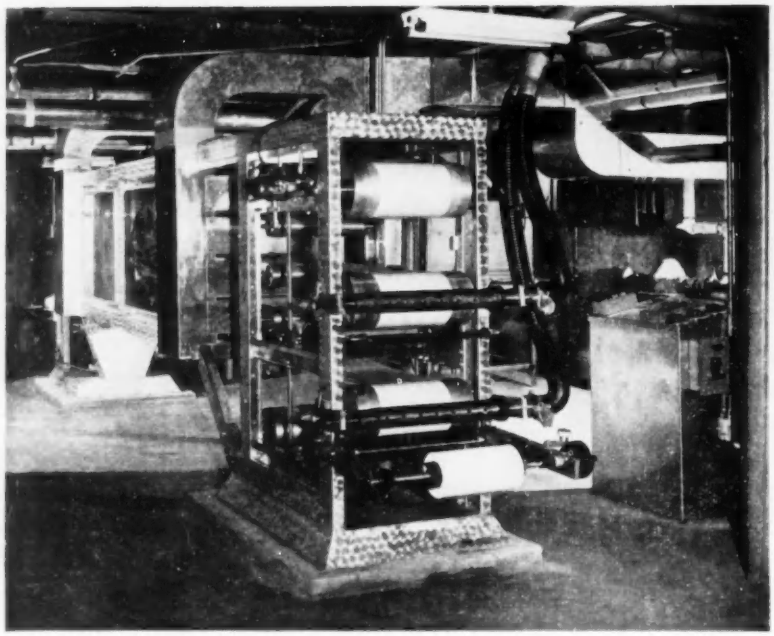
The equipment weighs 3600 pounds and measures 62 inches x 35 inches x 77 inches. The bulk is large but it can be moved easily by means of jacks and casters that are built into the unit.

Maximum tyeing speed is 24 ties per minute.

Unwind Stand Operates on Ferris Wheel Principle

An unwind stand known as the Staude Turn-Over Roll Stand has been put into production by the E. G. Staude Mfg. Co., Inc., 2675 University Ave., St. Paul, Minn. The stand is designed to operate in conjunction with high speed rotogravure, offset, or letterpress printing equipment.

The design allows rapid replacement of heavy paper rolls without overhead handling. Floor conveyors or trucks keep one or more rolls in position. As one roll feeds into the press, the counterbalancing arm of the stand rotates to pick up the next roll. The massive construction of the unit enables it to lift rolls 45" wide x 70" diameter.



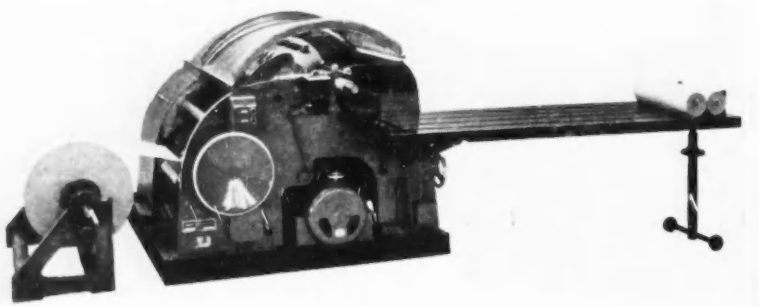
Experimental Coater Offered for Trial Runs

Product Research & Development Co., 4225 West Burnham St., Milwaukee 15, Wis. has recently installed the above experimental coating machine in the firm's laboratory. The machine is designed so that it can apply one or two coatings to one side of a web of paper, and can apply a decurling solution to the other side.

The machine is currently being applied to experimental work in connection with the sensitizing of diazo-type and similar papers. However, it is being offered for trials of other types of coating operations as well. It will be made available on a day-by-day basis to coaters who wish to study methods, formulation, base materials, etc. without interrupting their own production.

The machine is equipped with two air-knives and controlled hot air drying. The drive is electronic, giving uniform control at all speeds. All color rolls are equipped with variable speed drive.

Rolls of approximately 12 inches in width, mounted on standard three inch core, are used on this machine. Coating speeds are in the conventional commercial range. Principal construction material of the machine is welded aluminum.

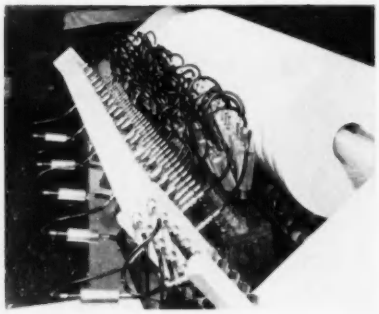


Counter Roll Machine Made in England

The Belanco Counter Roll Machine is a new development of Beasley, French & Co., Inc., 108 East 31st, New York 16, N.Y. It is manufactured by the firm's parent company in Bristol, England.

The machine winds reels up to 24" wide and from 4" to 9" in diameter continuously, from parent reels of up to 36" in diameter. Special adjustments made to accommodate larger diameter.

Loose end of each counter roll is sealed by paste. Reel is automatically ejected. Machine rewinds onto 2-inch mandrell without a cardboard core. It handles wide range of sheets at 1000 f.p.m.



Air Operated Score Knife Holder

The Dusenbery Model 654 Air Operated Score Knife Holder is said to be the first practical air operated score knife holder which could be mounted on ½" centers. When mounted back to back on a double support bar the second bank can be offset so that as a group the double knife bank will make ¼" wide cuts. It is manufactured by John Dusenbery Co., 271 Grove Ave., Verona, N. J.

Knife pressures of from 30 to 100 pounds pressure against a hardened steel roll are required to score cut paper and other web materials. In order to utilize the normal plant air supply of 40 to 80 PSI, and 1⅜ bore air cylinder is required to actuate a knife. Consequently it was found necessary to transfer the cylinder force through a flexible cable to knives set up ½" centers. The cylinders, being free to move at the end of the flexible cable in any direction, take up staggered positions so that three cylinders occupy only 1½" of linear space along a knife support bar.

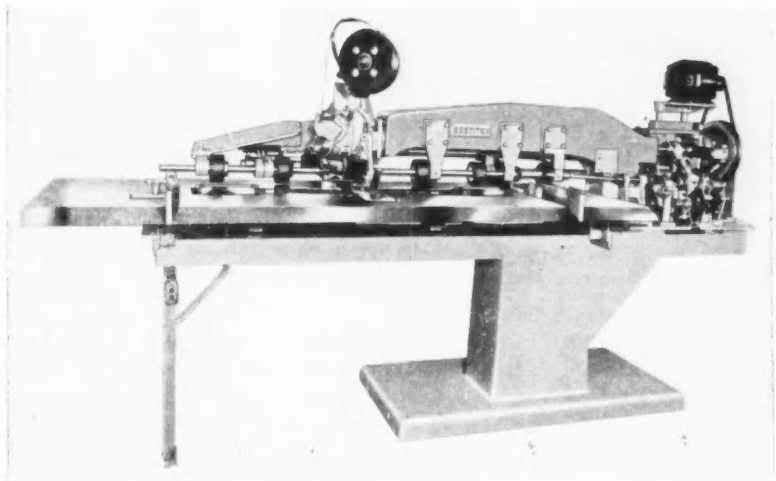
This knife holder is claimed to be useful for narrow width slitting such as is required in the pressure sensitive tape industry. It was originally desired to actuate these knives with air in order to maintain uniform, and predetermined pressure on each knife. The old type of spring actuated holders required individual adjustment of each knife by the operator and the resulting knife pressure was highly variable depending upon operator skill. Overloading and short knife life resulted. The air operated holder permits knife pressure adjustment of all knives in a setup with one adjustment of a pressure regulating valve.

However the air operation solved an equally important setup problem. In many plants it is necessary to set up for new width of cut several times a day. The resetting of knife holders for multiple cuts may require 15 to 20 minutes. However this setup time can be reduced to about one minute for slit width increments of ½" or ¼". Holders are stacked for ½" or ¼" cuts. Then only those knives which are required to cut are air actuated.

Three Ply Laminator for High Grade Board

Shown above are the laminator, applicator, and press section of a recently design three-ply laminator for operation on high grade board. The machine was built by Dilts Machine Wks. Div., Black-Clawson Co., Fulton, N. Y.

Constant tension unwinding equipment is furnished with this unit. Applicator and presses are made with completely accessible bearings. Rolls are air loaded.



Automatic Stitcher Can Also Be Operated Semi-automatically

A new automatic box stitcher, which is known as the Bostitch RSCA No. 585 Stitcher, is designed to provide semi-automatic operation also. It is a high speed machine, manufactured by Bostitch Inc., 990 Mechanic St., Westerly, R. I.

According to the manufacturer, this machine was the culmination of fifteen years of research. Special features of the unit are larger blank capacities, properly squared boxes, and minimum distortion to the board, it is claimed.

This model is said to handle nearly every size corrugated or solid fiber container now used. Maximum box length that can be stitched with side gauge and standard table is 41½ inches. Special extension table permits 76 inches. Maximum width of blank when side gauge is used is 48 inches. Maximum box depth is 85 inches with three-inch end flaps, or 64 inches with 24-inch end flaps. The maximum stitching speed is 400 stitches per minute.

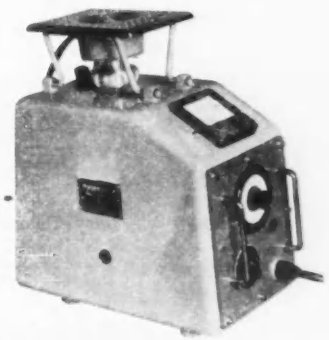
The machine applies a complete row of single stitches or single stitches with tie-stitch at each end of the seam. What is said to be a newly invented "last stitch register unit" accurately locates the last single stitch regardless of stitch spacing or of any variation in spacing along the seam. Where tie-stitches are used, the unit controls the location of the next-to-last stitch.

Narrow & Short Paper Case Sealer

J. L. Ferguson Co., Joliet, Ill., is now marketing the Packomatic Packer-Gluer, which is a short, narrow sealer that applies glue in spot patterns and seals all types of paper cases.

The machine occupies less than 30 square feet of floor space. It has a maximum speed of 10 cases per minute, and can handle containers in these size ranges: Length 8 inches to 24 inches, Width 6 inches to 16 inches; Height 5 inches to 18 inches.

Glue is applied in spots at ¾ inch centers. Spot pattern can be varied to accord with needs of the job.



Portable Dielectric Moisture Measurer

Said to be the first portable di-electric moisture measuring instrument for makers and converters of paper and board, cellophane, etc., a unit known as the Hygrotester-Boy is now available from Hygrotester Inc., 101 Henry St., Brooklyn 1, N. Y. The unit tests and measures a running sheet on the same principle as that applied in the firm's larger, stationary instruments.

The manufacturer states that the instrument gives exact control of the sheet's moisture content, will supervise air-condition apparatus, produce exact H_2O determination to assist in better slitting and folding and printability. It will check samples as well as running sheets.

NEWS OF ASSOCIATIONS

Eastern Conservation Committee Election

The Eastern Conservation Committee of the Wastepaper Consuming Industries, which begins its tenth year of operation on January 1, will again be headed by Joseph S. Miller, president of the New Haven Board and Carton Co., New Haven, Conn., as chairman.

The Committee, the objective of which is to stimulate the utilization of wastepaper, to promote and facilitate its collection in times of scarcity through regularly established channels, to assist the wastepaper industry in its objective to improve collection and grading practices, and to disseminate statistical information relative to the supply of and the demand for wastepaper, is composed of companies engaged in the manufacture of paper, paperboard, roofing and building materials in the Eastern Seaboard states.

Other officers chosen for 1955 include: Ralph A. Wilkins, vice-president of Bird & Son, Inc., East Walpole, Mass., vice-chairman; J. R. Kennedy, president of Federal Paper Board Co., Bogota, N. J., treasurer; William Foulds, Jr., president of Lydall & Foulds Paper Co., Manchester, Conn., chairman of Region No. 1; A. B. Huyssoon, executive vice-president of Continental Paper Co., Ridgefield Park, N. J., chairman of Region No. 2; M. J. Edwards, purchasing agent of the Kieckhefer Container Co., Delair, N. J., chairman of Region No. 3; D. M. Eyster, vice-president of Halltown Paper Co., Halltown, W. Va., chairman of Region No. 4.

Colley S. Baker, as secretary and executive director, is in charge of the Committee's headquarters at 370 Lexington Avenue, New York, N. Y.

Superintendents Local Meeting Dates

DATE	DIVISION	PLACE
Nov. 16	Miami Valley (Joint-TAPPI)	Alms Hotel Cincinnati, Ohio
Nov. 18	Michigan	Hotel Harris Kalamazoo, Mich.
Dec. 3-4	Pacific Coast Div. (Annual Meeting)	New Washington Hotel Seattle, Washington

TAPPI Local Meeting Dates

DATE	SECTION	PLACE
Nov. 15	Chicago	Chicago Bar Assn. Chicago, Ill.
Nov. 16	Joint Ohio, Miami Valley Supt.)	Alms Hotel Cincinnati
Dec. 2	Kalamazoo Valley	Hotel Harris Kalamazoo, Mich.
Dec. 3	Central District Empire State	University Club 431 E. Fayette St. Syracuse, N. Y.
Dec. 10	Delaware Valley	Engineers Club 1317 Spruce Street
Dec. 10	New England	Roger Smith Hotel Holyoke, Mass.
Dec. 14	Metropolitan District — Empire State	Fraunces Tavern Pearl and Broad Sts. New York, N. Y.
Jan. 11	Pacific	Longview, Wash.
Jan. 11	Lakes States	Conway Hotel Appleton, Wis.
Jan. 14-15	Southeastern	Francis Marion Hotel Charleston, S. C.

National Meetings are shown under "Remember These Dates" on page 5.

Gummed Industries Annual Meeting

Re-elected as president and vice-president of the Gummed Industries Association at the annual meeting on Oct. 21st were; R. F. Herrlinger and T. H. Mittendorf respectively, who will begin their second terms as officers of the Association.

In addition to the officers just mentioned, the following members were elected to the Board of Directors:

William L. Shattuck, The Adhesive Products Inc.; Jerry Warshaw, Atlantic Gummed Paper Corp.; Fred Rothschild, General Gummed Products, Inc.; Arno L. Zinke, Mid-States Gummer Paper Co.; Henry W. Stark, Jr., Rexford Paper Co.; F. A. Stocker, Stocker Manufacturing Co.; R. T. Meyer, Tape, Inc.

Philip O. Deitsch was named to his 18th term as managing director of the Association.

William H. Anders who, at the moment is in semi-retirement, and will be remembered as a Vice-President of the St. Regis Paper Company until last year, acted, upon the unanimous request of members of the Industry, as Toastmaster at the Industry's Annual Banquet.

The Industry is now giving serious consideration to the Spring Meeting in May of 1955, the exact date and location of which will be announced in the future.

Tinker Reports On S. A. Meeting

On his return from the three-week meeting of the Economic Commission for Latin America, just concluded in Buenos Aires, E. W. Tinker, Executive Secretary of the American Paper and Pulp Assn., reported most constructive results. The interchange of views, particularly between the U. S. pulp and paper industry and the representatives of Latin American countries, resulted in cordial, improved understanding and will progress the development of the pulp and paper industry in Latin America. The potential markets offered by the 160 million people in Latin American countries can only partially be supplied under the best of conditions in anticipated development of the needs of Latin America.

Some of the obstacles involved include extreme nationalism in some instances, and a shortage of raw material necessary in the manufacture of pulp and paper in other countries. It was Mr. Tinker's belief that the discussions will in some degree tend to eliminate local difficulties and not only encourage the development of the industry locally, but will offer expanded markets for export from the United States. Some 1000 delegates from all over the world attended the pulp and paper meetings.

Decision on Kitimat Mill This Month

Decision will be reached by the Forestry Department of British Columbia by the end of November on a forest management license application to allow for the erection of a pulp and paper mill at Kitimat. Intimation to this effect was given recently by the Hon. R. E. Sommers, B. C. Minister of Lands and Forests.

The Powell River Company is said to be planning erection of a $25 million pulp mill at Minette Bay about five miles from Kitimat and a $45 million paper mill in the Kitimat area.

If the government approves the granting of a forest management license a waiting period will ensue to allow for objections to be considered. If there are no objections a survey of the site will again be made and the company provided with a set of working plans outlining in detail the proposed investment.

Art and Science Of Modern Papermaking

"The Story Of Papermaking" ($5.00) by Edwin Sutermeister, recently published by S. D. Warren Co. and distributed by R. R. Bowker Co., provides an excellent, brief, non technical coverage of the art and science of present-day papermaking and fills a need for a short, readable history of the industry. Edwin Sutermeister's first-hand experience as former research scientist for S. D. Warren qualifies him to speak with authority on the manufacture of paper.

The focus of the book is less on the history of paper than on the art and the science of modern papermaking. The book goes deeper than the usual primer yet remains far more readable than any technical manual with complete coverage of every step in the manufacture of paper from a study of the non-woody fibrous materials to the final process of calendering and finishing. A guide to various paper grades—complete with definitions—provides a helpful "condensed dictionary" at the end.

The book may be ordered from the Book Dept., PAPER TRADE JOURNAL, 15 W. 47th, New York 36, N. Y.

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PAPER PEOPLE

Jaret Named Exec. Asst. to Wyatt of Hinde & Dauch

Ralph E. Jaret has been named executive assistant to John B. Wyatt, vice-president in charge of eastern division sales of The Hinde & Dauch Paper Co.

In his new position, Mr. Jaret will assist in the management of a sales organization operating from factory offices at Baltimore, Buffalo, Gloucester City, N. J., Hoboken, N. J., and Richmond, Va.

Hinde & Dauch, one of the nation's major producers of corrugated shipping boxes, also operates plants at Chicago, Cleveland, Detroit, Kansas City, St. Louis and Sandusky, Ohio, from headquarters in Sandusky. A new factory will soon be built in Gastonia, N. C.

Prior to his appointment, Mr. Jaret was assistant sales manager at the company's Hoboken factory, which is also headquarters for the eastern division sales staff. He has been associated with Hinde & Dauch since 1949.

Olaf Nielsen Joins Gaillet & Hartig

Gaillet & Hartig Co., Inc., exporters and importers of woodpulp, paper and machinery with offices in New York, San Francisco and Paris, have appointed Olaf Nielsen, Jr., as executive vice-president. Mr. Nielsen, who was formerly associated with Elof Hansson, Inc., will make his headquarters at the New York office of Gaillet & Hartig, 250 Park Avenue.

Hano Names Two Directors

Philip Hano and George Hano have been elected as members of the board of directors and vice-presidents of the Philip Hano Co., Inc., nationally known manufacturers of business forms. The promotions were made at meetings of the stockholders and directors October 14.

Gay Heads Pulp & Paper Div. Library Fund Appeal

Edward R. Gay, executive vice-president of St. Regis Paper Co., will head a group of pulp and paper manufacturers organized to help the New York Public Library's current funds appeal. Mr. Gay and his committee will work with other industry groups to raise $400,000.

In accepting the chairmanship of the pulp and paper group, Mr. Gay cited an example of his use of the reference library's facilities: "One day I needed to know how certain foods were packaged, what kinds of containers were used, and what packaging equipment was employed. Ten minutes after requesting this information at the library's Fifth Avenue building, I had the basic data in my hands," Mr. Gay said. "This great service to local businessmen," Mr. Gay pointed out, "is provided free of charge, even though the reference library is privately financed."

"Although the neighborhood branch libraries are supported by city funds," Mr. Gay explained, "reference facilities in the central building are maintained with endowment income, which is insufficient to meet the higher costs of personnel, books, and maintenance of the central building. Therefore, during the past five years the library has been forced to approach local business for financial assistance; its current budget is $3,300,000. A staff of 600 is employed to administer the reference library's three-and-a-half million volume collection."

Glen Named Secretary of Consolidated Paper Corp.

David J. Glen, C.A., F.C.I.S., has been elected secretary of Consolidated Paper Corp., Ltd. Mr. Glen was previously general auditor and assistant secretary of the company and has been associated with the paper industry since 1926.

U. S. Gypsum Promotes Henry

Burnette Henry, formerly board plant superintendent at United States Gypsum Co.'s Plaster City, Calif., plant, has been appointed production engineer, board, for the Western Gypsum Division.

He replaces W. E. Seeburger, who has been appointed production engineer, mill and packing, for the Western Gypsum Division. Mr. Henry will function from U.S.G.'s Chicago headquarters. He joined U.S. Gypsum in 1946 in the Alabaster, Mich., plant as quarry engineer. He was appointed plant engineer-superintendent in 1950, quarry superintendent in 1951, and in 1952 was transferred to the Plaster City plant as quarry and railroad superintendent. He was named board plant superintendent in 1953.

Managerial Changes At Martin Paper Prod.

Three major executive appointments have been announced by Martin Paper Products Ltd., Winnipeg, a subsidiary of Powell River Co. Ltd., Vancouver. George A. Holland, of Calgary, moves from manager for Alberta to vice-president of the company and head of British Columbia operations, with offices in New Westminster. Harold Townsend, formerly sales manager at Calgary, becomes manager of the Calgary branch; and Spencer James, in charge of production at Edmonton, now becomes full manager of the Edmonton branch. Martin Paper Products, makers of corrugated containers, operate plants at Winnipeg, Calgary and Edmonton. The contract for the construction of the new plant at New Westminster has now been let and it should be in production early in the spring of 1955. The head office is at Winnipeg, where J. R. Glynn is vice-president in charge of operation.

Consolidated W. P. & P. Promotes G. W. Mead II

George W. Mead II has been appointed director of product development of Consolidated Water Power & Paper Co.

Mr. Mead, a native of Wisconsin Rapids, was graduated from Yale University where he majored in chemistry and the Institute of Paper Chemistry, Appleton, Wis. in 1952 where he received a Master of Science degree. He joined Consolidated during the same year as Wisconsin Rapids Division sulphite mill chemist and was later named chief of pulping research group.

As director of product development, Mr. Mead will be working on new products, quality improvement, and specification changes in the enamel paper field.

Canavan Retires From Niagara Falls I. P. Mill

Salaried employes of the Niagara Falls mill of International Paper Co. recently were hosts at a dinner party in honor of John W. Canavan who is retiring as superintendent of the mill. Mr. Canavan worked for the company for 33 years.

George H. Rand, assistant to the manager of the northern division group of I.P. mills, paid tribute to the plant superintendent. He said: "Mr. Canavan's retirement must be considered a great loss to the company. The perpetuation of the paper industry is dependent on the knowledge and skills of people like Mr. Canavan."

H. P. Bailey, plant manager, in presenting the guest of honor with a set of matched luggage as a gift from those present said that he considered Mr. Canavan "one of the most outstanding men in the field."

Koehler Joins Phoenix Products

Walter A. Koehler, formerly sales manager of the Milwaukee Lace Paper Co., has joined the Phoenix Products Co., of Milwaukee, Wis., to assume sales direction of the packaging division serving the general merchandising field and the laundry and dry cleaning industry.

Mr. Koehler has been associated with the paper processing and packaging industry for over sixteen years, becoming sales manager of the Milwaukee Lace Paper Co. in 1951.

George Ingram Named Riegel Controller

Riegel Paper Corporation has appointed George Ingram, Jr., as controller. He will continue to be located at the company's Milford, N. J., mill and will assume full responsibility for all accounting, cost, payroll, and related functions.

Mr. Ingram joined Riegel in 1951 as assistant controller. He was formerly with the New York engineering firm of Stevenson, Jordan & Harrison.

Robertson and Calder Elected to National Conference Board

Reuben B. Robertson, Jr., president of The Champion Paper and Fibre Co., Hamilton, Ohio, has been elected as a board member of the National Industrial Conference Board. He will serve for a one-year term.

Alexander Calder, Jr., executive vice-president and general manager of Union Bag & Paper Corp., was also elected a board member of the organization.

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Major Named Engineer At St. Regis Pensacola

A. Robert Major has been appointed chief engineer of the kraft division at the St. Regis Co.'s Pensacola plant, effective November 1, upon the retirement at that time of Russell G. Seip.

Mr. Seip, who is retiring under the company's retirement plan, will continue in an advisory capacity.

Mr. Seip joined the Florida Pulp and Paper Co. in 1939, and when that company became a part of the St. Regis Paper Co. in 1947 he was appointed chief engineer of the kraft division at Pensacola.

Mr. Major became associated with the predecessor of St. Regis at kraft center in February, 1946, as a structural and mechanical engineer. He took part in the designing and construction of the Alabama mill addition to the plant, and in March, 1948, he became plant engineer of the original Florida mill. Two years later he assumed the duties of plant engineer of the Alabama mill as well.

Mr. Major, in his new capacity, will be in charge of all pulp and paper mill construction work and will report directly to Willard E. Hahn, vice-president and resident general manager at kraft center.

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CORN PROCESSING DIVISION

CLINTON, IOWA

N. T. Burke Moves to Fibreboard's Chicago Office

Fibreboard Products Inc., with head offices in San Francisco, recently opened a sales office in Chicago, Ill. Norman T. Burke, who has been an employee of the company since 1938, has been transferred from the company's San Francisco Sales Office, to the newly opened Chicago Office located in the Daily News Building on Madison Avenue.

Charles Swerdlove Promoted by Gair

Charles Swerdlove has been appointed assistant to W. W. Scheide, folding carton division, Robert Gair Co., Inc., New York, effective November 1.

He joined the company's industrial engineering department in 1950, has been located principally at its Thames River (Conn.) plant.

Nepco Names Veneman V.P.

Gerard E. Veneman has been named vice-president and director of sales of Nekoosa-Edward Paper Co., Port Edwards, Wis. Carl A. Schiebler has been appointed general sales manager.

Peters Joins Halifax

Virgil Peters has joined Halifax Paper Co at Roanoke Rapids, N. C. as maintenance engineer. He was formerly with Longview Fiber Co., Longview, Wash.

C-Z Promotes Two

Dudley F. Church, technical supervisor at the Camas Crown Zellerbach mill, has been named research liaison assistant of the corporation effective November 1. He has been transferred to C-Z headquarters in San Francisco.

Replacing Church as technical supervisor of the Camas mill will be Robert G. Stewart, present assistant technical supervisor.

Mr. Church came to work at the Camas mill in 1947 as bleach plant chemist. He was promoted through various assignments to the position of technical supervisor in 1952.

Mr. Stewart was employed as an engineer by Boeing and as a chemist by a British Columbia Paper Co. before coming to Camas in 1947 as a sulphite tester. He then worked up through positions as beater tester and lab assistant to his present position.

C-Z of Canada Promotes F. A. Scott

Appointment of Frank A. Scott as general sales manager, is announced by Crown Zellerbach Canada Ltd.

Well-known in the Western Canadian paper industry, Mr. Scott embarked on his business career with the company, joining it in Vancouver in 1933, after completing his formal education.

Sours Leaves Marathon for Consolidated Water Power

Mervin H. Sours has joined the Personnel and Labor Relations Department of Consolidated Water Power & Paper Co. He will work as a specialist in wage and salary evaluation and stabilization. He has been employed by Marathon Corp. in the same capacity for the past twelve years.

Riegel Names Ingram Controller

Riegel Paper Corp. has named George Ingram, Jr. controller.

OBITUARIES

Michael Kettenhoven, 58, public relations assistant for the Kimberley-Clark Corp., died at his home in Appleton, Wis., October 24. He formerly was manager of the firm's mill at Kimberley.

William W. Campbell, vice-president in charge of sales, Lockport Felt Co., was killed October 31 in the crash of a company-owned Beechcraft near Middletown, Conn. Also killed were Mrs. Campbell and the pilot, Donald Goodridge.

Joseph X. Daigle, 93, retired foreman for the International Paper Co., died October 29 at his home in Bellows Falls, Vt.

Edward E. Gauche, 76, retired senior vice-president of the United States Playing Card Co., died November 2 in Cincinnati, Ohio.

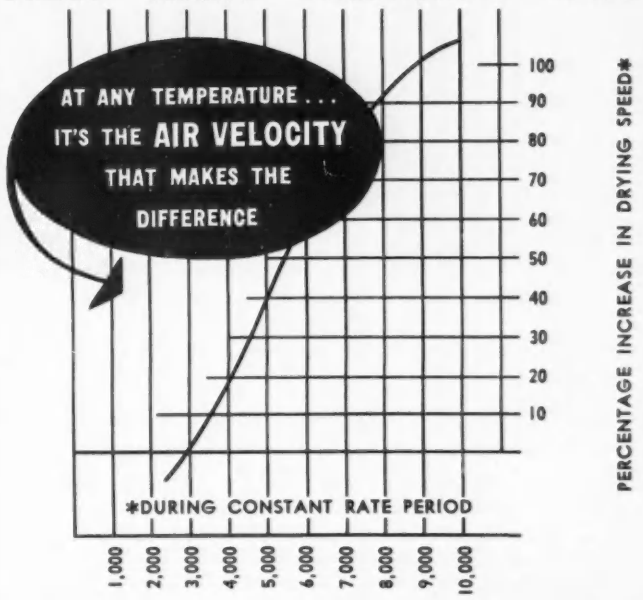
Lawrence S. Crabb, was crushed to death on October 21 by a saw carriage in the wood room of the Wisconsin Rapids, Wis., Division of Consolidated Water Power & Paper Co.

William F. Klinker, 66, sales manager for the Zellerbach Paper Co., died October 21 in Portland, Ore.

Mr. Klinker had worked for the Zellerbach company for 30 years.

Howard W. Anderson, 48, nursery manager of the Nekoosa-Edwards Paper Co., Port Edwards, died at his home in Wisconsin Rapids October 11 of a heart ailment. Mr. Anderson had been an official of the Wisconsin Nurserymen's Assn. for many years and had served as its president in 1953. Funeral arrangements are incomplete.

NEW HIGH VELOCITY DRYER



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Sidney L. Wellhouse, 70, president of the National Paper Co. of Atlanta, died in an Atlanta hospital November 2, after an illness of two months.

A prominent figure in the paper and box industry, Mr. Wellhouse was a former president of the National Paper Trade Assn. He was director of the organization at the time of his death.

He was also a member of the advisory committee of the Gummed Products Co., Troy, Ohio, and a director of the National Folding Box Assn.

During World War II he was a member of the Coarse Paper Merchants Industry Advisory Committee of the Office of Price Administration. He was also a member of the Industry Advisory Committee of the Folding Box and Paper Distributing Trade for the War Production Board.

Miss Dorothy M. McCloskey, 50, assistant treasurer of the Union Bag and Paper Corp., 233 Broadway died October 26, in New York Hospital after a long illness.

Miss McCloskey joined the paper bag concern in 1924.

Thomas F. Farrell, 74, former superintendent of the United Board & Carton Corp. plant in Lockport, N. Y., died October 31 in Lockport City Hospital.

A. J. Felton

NEWS OF SUPPLIERS

Earl Carrier

R. R. Meltz

• ELECTRIC STEEL FOUNDRY CO., Portland, Ore., and Danville, Ill., has appointed Earl Carrier to act as their manufacturer's representative in the mid-west area. Mr. Carrier will be calling mainly on pulp and paper mills, selling ESCO stainless steel equipment.

Mr. Carrier has spent the past three years calling on the pulp mills, atomic energy plants, chemical plants, and petroleum plants in the west, helping them with their stainless steel valves, fittings and piping problems. Previous to that time he was associated with a western foundry, and is well acquainted with casting production and application.

He may be reached in care of: Electric Steel Foundry Co., 712 Porter street, Danville, Ill., or at his home address, Route 5, Box 241, Oshkosh, Wis.

• ALEXANDER BROTHERS BELTING CO. on November 1 moved to new and modern quarters, immediately adjacent to their packing and specialty factory at Walnut street and Princess Ave., Camden 3, N. J. Telephone Number will still be Philadelphia MArket 7-4620.

• QUAKER RUBBER CORP., Division of H. K. Porter Co., Inc., Philadelphia 24, Pa., has appointed R. R. Meltz as manager, Roll Covering Department.

Mr. Meltz joins Quaker with a background of fourteen years' experience in the rubber industry, where he has held such positions as chief chemist and assistant plant superintendent. In his new position, he will coordinate the activities of factory and field personnel in the sales and service of Quaker roll covering, which includes all re-covering and re-grinding of rubber covered rolls, as well as covering new rolls.

• RELIANCE ELECTRIC & ENGINEERING CO. is opening a direct factory sales office in Milwaukee and Vernon S. Barnes is appointed branch manager there for the Cleveland, Ohio motor manufacturer.

The new office is located at 5856 North Port Washington Road. Mr. Barnes joined Reliance in July 1953 and for the past several months has been on the application engineering staff in Milwaukee of the company's former manufacturer's agent there.

• SHARTLE BROTHERS, Middletown, Ohio, division of The Black-Clawson Co., has announced that Al J. Felton has been appointed executive sales engineer.

Formerly located at Fulton, N. Y., and working out of the Dilts Machine Works Division offices in that area, Mr. Felton has represented the interests of the Shartle Division in New York, New England, and the Metropolitan area for the past five years. He has now moved his family to Middletown and will travel out of the Shartle Division offices.

Though his new assignment as executive sales engineer will add to his scope of sales and engineering activities, Mr. Felton expects to continue service to many of the mills in the Northeastern and Metropolitan area.

• BAILEY METER CO., Cleveland, Ohio, manufacturers of industrial instruments and automatic control equipment, has moved its New Orleans District office to larger quarters at 909 S. Jefferson Davis Parkway, New Orleans 25, La.

Under the managership of S. G. Dukelow, the New Orleans District office is staffed by Instrument Engineers J. M. Bevan and D. J. Fogarty.

• LINK-BELT CO. officially opened its modern district sales office and warehouse in the Guilds Lake area of Portland on October 29 with an open house attended by about 400 people.

The new company-owned building, at 3030 N. W. Industrial Street, includes office space, large warehouse facilities and a factory branch store. It has been designed so that it can be easily expanded in the future.

• DIAMOND ALKALI CO. and Diamond Inter-American Corp. have moved their New York office to 99 Park Avenue. They were formerly located at 122 E. 42nd street.

J. S. Detwiler

• TAYLOR INSTRUMENT COS. has appointed Joseph S. Detwiler export manager. He succeeds John H. Neubert who established the department forty years ago and served continuously as its manager ever since. Mr. Detwiler will be succeeded as divisional sales manager by Granville F. Barnum.

In the pulp and paper industry, Mr. Detwiler represented the company in the development and application of instruments to all phases of pulp and paper making which are subject to automatic control.

In 1945, Detwiler was named a divisional sales manager in charge of the sale of industrial equipment to the dairy, textile, rubber, air conditioning, power, paper, metals and sugar industries.

In preparation for assuming his new duties as export manager on February 1, Mr. Detwiler left October 15 for a six weeks tour of South America where he will call on sales agents and many important customers in eight countries.

• UNITED CLAY MINES CORP., has elected Bernhard F. Gentach president to succeed the late Ogden A. Kantner. Mr. Gentach joined the technical staff of the company in 1940. He served with the armed forces from 1941 through 1945 and was later associated with the Baldwin-Lima-Hamilton Corp. of Philadelphia. In 1947 he returned to the United Clay Mines Corp. as sales manager and became vice-president in March of 1952.

Gordon W. Lee, vice-president of the company, was appointed vice-president and general manager. Mr. Lee came to the company in 1947 after spending a number of years with the Braden Copper Co. in Santiago, Chile. He is also a Director of Carolina Resources Corp.

The Board also made Girard W. Phelps vice-president and Technical Director. He has been with the company since 1939. Ralph E. Rhodes, Jr., was appointed Sales Manager.

• AMERICAN CYANAMID CO. has named James R. Wellman director of its new Paper Chemicals Application Laboratory in Chicago.

Since 1945, Mr. Wellman has served as the technical service representative in the midwest for the Paper Chemicals Department. Prior to that time he was chief chemist for Port Huron Sulphite and Paper Co., a position he held since 1935, two years after he joined the company.

Under Mr. Wellman's direction, the new laboratory, working in conjunction with Cyanamid's paper mill customers, will do experimental work with American Cyanamid Co.'s paper chemicals as they may be used in connection with a wide variety of pulp furnishes. In working out chemical formulations for papermaking and in testing papers, the laboratory will try to approximate mill operating conditions with respect to the many variables in mill operations which may be reproduced in the laboratory. Developmental and fundamental research will continue to be the chief function of the Paper Chemicals Laboratory at Stamford, Conn.

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J. J. Davis

R. W. de Weese

• ELECTRIC STEEL FOUNDRY CO. has appointed R. W. de Weese as vice-president in charge of sales, and Jefferson J. Davis as vice-president in charge of product divisions.

R. W. de Weese is a veteran of fourteen years of service with ESCO. His experience includes production and inventory control, branch and organizational problems, and stainless steel casting production. He has served as manager of the High Alloys Division, as assistant to the president, and the general nature of his work has been the promotion of high alloy sales both in cast and wrought products. He has also been managing head of the company's metallurgical and inspection departments.

Jefferson J. Davis joined the ESCO-Seattle branch of the company in February, 1936, and in 1942 established and managed the ESCO-Eugene, Oregon, branch where he remained until the fall of 1943 when he became co-manager of the logging rigging division of the main plant in Portland. The development of ESCO's business in the construction equipment industry required a reorganization of this division in 1945, and Mr. Davis was appointed as manager of the Construction Equipment Division, the position he held until elected to vice-president in charge of product divisions.

• RESEARCH CORP. reports that engineering, manufacturing and sales of Cottrell electrical precipitators, until now divisional activities of Research Corp., a non-profit foundation, have been taken over by a new wholly-owned subsidiary, Research-Cottrell, Inc. Dr. Barker, who is also president of Research Corp., has been elected chairman of Research-Cottrell, Inc. Howard Coonley, vice-president of Research Corp., is vice-chairman of the subsidiary company.

Carl W. Hedberg, formerly vice-president of Research Corp. and general manager of its Precipitation Division, has been elected president of the new firm. L. M. Roberts, formerly director of engineering, and P. F. Eilenberger, formerly director of manufacture, have been elected vice-presidents of Research-Cottrell, Inc. James M. Knox and J. William Hinkley, vice-presidents of Research Corp., have been elected treasurer and secretary respectively of the new firm.

The separation of the precipitation business from Research Corp.'s grants and related functions will provide clear-cut distinctions between the industrial and the eleemosynary activities of the foundation. Research Corp. will continue to receive the net earnings of the precipitation activities. As in the past, this income will help provide funds for the foundation's programs of grants to colleges, universities and scientific institutions for research in the physical sciences, including engineering and mathematics.

The Cottrell electrical precipitation equipment, which will be produced and marketed by the new subsidiary, was pioneered by Frederick Gardner Cottrell, whose work in this field led directly to his establishment of Research Corp. in 1912. At that time, Dr. Cottrell assigned his patent rights on electrical precipitation to the non-profit organization so that any income from them could be applied to supporting the researches of other scientists.

• GEIGY DYESTUFFS, Division Geigy Chemical Corp. announces the following alignment of personnel in the Paper Dept.:

John J. DeJongh who resides at Groton, Mass. will continue to call on the New England accounts and will also cover parts of New York State. In addition he will act as technical aid and sales consultant to G. A. Wilkie and R. W. Redston in the Quebec, Canada area.

F. G. Thwaites who resides in Toronto will continue to service the mills in Ontario area and also in Western Canada.

Dudley J. Nixon who resides in New York will cover the paper mills in the Philadelphia area and will also continue to cover accounts in the Metropolitan New York area. In addition he will act as technical aid and sales consultant to L. C. Voss in the Ohio area.

Herman H. Gottsleben who resides in Appleton, Wis., will continue to call on the accounts in Wisconsin, Minnesota and Michigan. He will be assisted by William A. Ludke who will look after details and shipping at the Appleton, Wis. warehouse.

Daniel P. Fessia who will operate out of New York will act as technical aid and sales consultant for Charlotte, N.C. and Chicago, Ill. branches.

Walter Kenowski heads laboratory service in New York.

Geigy Dyestuffs manufactures and markets dyestuffs, pigments, auxiliaries and Flexographic inks for the paper manufacturing and converting trade.

John O. Tragard

• MASON-NEILAN REGULATOR CO., Ltd., of Canada has appointed John O. Tragard Sales Manager. Mr. Tragard has for many years been connected with the industrial control equipment field and has previously served in sales-executive capacities with The Foxboro Co. and Hammel-Dahl Co. His headquarters will be at the Montreal office, 5415 Paré Street, Montreal.

• RELIANCE ELECTRIC AND ENGINEERING CO., Cleveland has appointed Charles F. Carnish, service engineer in Detroit since 1951, a district sales engineer effective November first, continuing to report to C. B. Allen, Detroit district manager.

Mr. Carnish joined Reliance in 1947 and worked for over three years in the company's Electronic Laboratory.

• NATIONAL STARCH PRODUCTS, INC., has purchased a tract of land at Meredosia, Ill., for the construction of a second vinyl resin plant. This plant will supplement the production of their Plainfield, N. J., resin plant.

The company plans to manufacture principally vinyl acetate polymers and copolymers at this new location. Construction will begin at once.

Repair Your Own Wires
with
SAVA-WIRE
THE FOURDRINIER WIRE
PATCH
that saves:
TIME - MONEY - LABOR and MATERIAL - GIVES NORMAL LIFE TO A FOURDRINIER WIRE THAT WOULD HAVE BEEN JUNKED.
INTERNATIONAL WIRE WORKS
Menasha, Wisconsin, U.S.A.

James A. Slater

James D. Brown

• RUST ENGINEERING CO. has appointed James A. Slater sales engineer. Prior to joining the Rust organization, Mr. Slater was project supervisor in the Chemical and Gas Department of the Koppers Co., Pittsburgh. He had been associated with Koppers in sales and engineering capacities since 1934.

• ATLAS POWDER CO. has elected Edward J. Goett a director and vice-president, in charge of the company's Chemicals, Darco and Commercial Development Departments.

Mr. Goett, formerly a director and sales development manager of Chas. Pfizer & Co., joined Atlas last July to head up the newly-formed Commercial Development Department.

W. Clayton Lytel was named general manager of the Atlas Chemicals Department, succeeding Kenneth E. Mulford, who was appointed assistant to Mr. Goett.

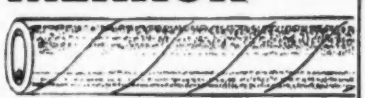
• JACKSON AND CHURCH CO., Saginaw, Mich., has appointed James D. Brown to the sales force of the paper and pulp department.

Mr. Brown will represent J-C's Zenith pulp presses and Roto-pulper machines which are used for high density bleaching, de-inking, washing and other pulp processing applications. Prior to joining Jackson and Church Co., he represented Sutherland Refiner Corp. for six years and previously was manager of the pulp and paper division of Sprout Waldron Co.

• MAGNUSON PRODUCTS CORP., manufacturer of Permag cleaners, has recently placed two new representatives in two of its sales territories. Harry R. Johnson has taken over the Chicago territory and will headquarter at 10017 S. Perry Ave., Chicago 28.

Wayne J. Streavig will service the area outside of Philadelphia.

MERKOR



Non-Returnable, Durable standard mill core.

GARTEX

Returnable and Non-Returnable extra strong mill core for regular and special needs.

MADE TO YOUR SPECIFICATIONS
Write for samples and prices
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PAPER TUBE, INC.
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TRENTON, NEW JERSEY
Sales Offices:
NEW YORK OFFICE, 500 5TH AVE.
PHILA., PA., PHONE MARKET 7-3313
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THE RUST ENGINEERING CO.
PITTSBURGH 19, PA. • BIRMINGHAM 3, ALA.
Offices in Principal U.S. and Canadian Cities
Engineers *Constructors*
Complete Service for PULP and PAPER MILLS including all auxiliaries and byproducts.
Surveys • Reports • Design
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CONSULTING ENGINEERS
Process Studies, Design, Specifications and Engineering Supervision
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Steam, Hydraulic and Electrical Engineering
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80 Federal Street Boston 10, Mass.

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Sample impressions from our extensive library cheerfully submitted upon request . . . Prompt, expert, attentive service.
ROLLS and MANDRELS MADE TO ORDER
Bigelow 3-2421-2-3
THOS. & GEO. M. STONE INC. Est. 1859
504 Mulberry Newark 5, N.J.

R. E. Bodette

• OLIVER UNITED FILTERS, INC., has appointed Richard E. Bodette, Pittsfield, Mass., as sales engineer for the pulp and paper mill division. Mr. Bodette was formerly with St. Regis Paper Co. and more recently with E. D. Jones & Sons Co. He will represent Oliver principally in New England and New York.

• BURTONITE CO., Nutley, N. J., has named J. W. Copps, P. O. Box 16, Station F, Milwaukee, Wis., sales representative in the Wisconsin-Michigan-Minnesota territory, and H. A. Dubuc, 133 Myrtle street, Manchester, N. H., sales representative in New England. Also Charles Albert Smith, Ltd., 356 Eastern Ave., Toronto 8, Canada, Canadian distributor for its products.

• KIDDER PRESS CO., Dover, N. H., has expanded the sales territory assigned to Gibbs-Brower Co., Inc., N. Y.

Originally appointed early in 1953 as sales representatives for Kidder slitters and rewinders to paper mills, Gibbs-Brower has now been assigned full representation to all converters as well. The territory includes all of the United States and Canada, East of the Rocky Mountains.

This expands the old business relationship between the two firms. From 1898 to 1933 Gibbs-Brower was exclusive selling agent for Kidder products. The appointment follows the completion of Kidder's $250,000 building expansion program at their Dover, N. H. Plant.

• ALBANY FELT CO. of Canada, Ltd. has broken ground for the construction of a new one-story office building at its location in Cowansville, Quebec. Also, new machinery has been ordered for the yarn winding, weaving and finishing departments. This includes a stainless steel treating tank, stainless steel fulling mill, an automatic 24-spindle filling winder, a 350-inch and a 420-inch loom. Scheduled for completion by January 1, 1955, the estimated cost of this new equipment and building program is more than $250,000. When complete, this expansion will increase the plant's capacity by more than 25%.

NEW LITERATURE

An Expanded Range of Alloys and Product Application. (Folder) Tells story of how they are now able to offer ferrous and non-ferrous centrifugal cylindrical castings for all phases of industry, including special purpose castings, resistant to wear, abration, corrosion and heat. Sandusky Foundry & Machine Co., Market and Fulton streets, Sandusky, Ohio.

Armstrong Air Traps. (Bulletin 2022) Describes methods of selecting and installing air traps for automatic drainage of water from compressed air intercoolers, aftercoolers, receivers, separators and drip points. Also includes detail drawings, physical data and list prices on ball float, inverted bucket and snap-action air traps. Armstrong Machine Works, 814 Hoffman street, Three Rivers, Mich.

Colloidair Systems for Recovery of Suspended Material . . . for Waste Water Treatment . . . Etc. Features factual data on efficiency of Colloidal Process, flow sheets of typical installations, description of operating principles, and analysis by types of industries of various applications. Bulkley, Dunton Processes, Inc., 295 Madison Avenue, New York 17, N. Y.

Chromium Plating for Industry. (Bulletin) Discusses physical characteristics, maintenance, and reclamation and salvage of incorrectly machined parts. Prevents wear and corrosion of metal parts and machinery in the paper industry. Simmons Plating Works, Inc., 219 Pryor street, S.W., Atlanta, Ga.

Emerson Permanent Magnetic Separation. (Catalogue M-554) Includes illustrations, engineering drawings, construction, maintenance and operational details. Emerson magnetic plates require no electricity. The magnets are completely enclosed by plate housing of non-magnetic stainless steel, thus making it impossible for any material to come in direct contact and thus cause loss of magnetic strength. Also equally impossible for dampness in housing to affect power of the magnets. Emerson Mfg. Co., Div. of John W. Bolton & Sons, Inc., 9 Osgood street, Lawrence, Mass.

Tremco Floors and Floor Problems. (24p. Brochure) Includes photographs, drawings and diagrams. Explores such subjects as various types of floors, how they are built, what factors enter into their deterioration, how floor troubles can be diagnosed and treated. Tremco Mfg. Co., 8701 Kinsman Road, Cleveland, Ohio.

Strength Characteristics. (Color Chart and Engineering Data Sheet) Shows graphically the theoretical ultimate strength, actual ultimate strength, fastener strength, operating strength with fasteners, operating strength with splice and troughing index for eight of the most popular ply and material combinations of conveyor belt constructions. Belting Dept., Quaker Rubber Corp., Div. of H. K. Porter Co., Inc., Tacony & Comly streets, Philadelphia 24, Pa.

Shock and Vibration Isolators Series 5200. (Bulletin 541) Gives information on load ranges of Series 5200 mounts, designed primarily as shock isolators for application in marine, transportation and industrial fields. Includes specification data and graphs giving data for isolator loads, shock transmissibility, vibration transmissibility and coupled natural frequencies. Barry Corp., 1000 Pleasant street, Watertown, Mass.

Speed Variator. (Bulletin GEA-6180) Provides information on design and operating features, ratings and dimensions of a packaged, all-electric adjustable voltage d-c drive operating from a-c power. General Electric Co., One River Road, Schenectady 5, N. Y.

Ahco Defcamers. (Bulletin) A guide to the characteristics and application for preventing foam and bubbles at various stages of the pulp and paper making process—from the pulp mill to the paper mill. On the back page is a list of other Ahco products with brief statements as to their use in the paper industry. Arnold, Hoffman & Co., 55 Canal Street, Providence, R. I.

Combined Torsion and Bending in Roll Shafts. (Engineering Report 4) Explains how to compute the maximum allowable stress for good design and the service factor which is significant with respect to gradual or shock loads. Also presents two basic formulas and typical examples for calculating torque and shearing stress. Rodney Hunt Machine Co., Dept. IR, 70 Maple Street, Orange, Mass.

DeLaval Crown Couplings. (Bulletin 2203) Describes their line of crown couplings and includes an exploded view

of the coupling and table containing data necessary to select the correct coupling for a given application. DeLaval Steam Turbine Co., Nottingham Way, Trenton 2, N. J.

Eriez Non-Electric Permanent Magnetic Separators. (Catalogue 17) Provides complete information on installation, technical data, specifications and available sizes of the Magnalarm, of plate magnets, magnetic humps, grate magnets, pipeline traps, ferrous cleaners, micro-magnetic separators, magnetic pulleys, drums, sheet fanners, hoppers and slurry drums, all constructed with Alnico V. Also contains illustrated sales copy. Eriez Mfg. Co., 33 Magnet Drive, Erie, Pa.

Link-Belt Series 500 Ball Bearing Trolley. (Book 2536) Contains specification data for selection of new trolleys or replacement of trolleys for existing installations. Also includes application and maintenance information, a description of the attachments commonly used and 12 illustrations of typical overhead trolley installations. Link-Belt Co., 300 W. Pershing Road, Chicago 9, Ill.

Performance of Wire Mesh Demisters. (Reprint) Comprehensive report on the performance of wire mesh demisters presented by Otto H. York, president, at a recent A.I.Ch.E. meeting. Includes photographs, tables and charts for the clearer visualization of various applications and operating characteristics, as well as numerous case histories taken from the chemical, petroleum and petrochemical industries. Otto H. York Co., Inc., 6 Central Avenue, West Orange, N. J.

Surface Preparation. (2p. Bulletin) Points out importance of proper surface preparation in all coating or painting applications, and discusses possibility of coating failures due to adhesion loss, osmotic blistering and under-film corrosion if improperly cleaned. Also included are photographs of actual sandblast job. Metalweld, Inc., Scotts Lane & Abbottsford Avenue, Philadelphia 29, Pa.

Swartout Flush Diaphragm Pressure Transmitter. (Bulletin A-713) Describes Type P3T transmitter in detail and gives data on principles of operation. Cutaway view and dimensional diagram of the transmitter are provided. Swartout Co., 18511 Euclid Avenue, Cleveland 12, Ohio.

AMERICAN PAPER AND PULP ASSOCIATION'S PAPER PRODUCTION RATIO REPORT

(Production as percent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

1954	Oct. 2 95.0	Oct. 9 93.7	Oct. 16 95.2	Oct. 23 94.5r	Oct. 30 96.8
1953	Oct. 3 96.5	Oct. 10 97.8	Oct. 17 97.0	Oct. 24 97.0	Oct. 31 96.8

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1953	94.5	94.6	94.4	92.7	93.9	93.8	82.2	94.7	92.7	97.2	94.6	82.8	92.3
1954	93.3	94.0	93.1	92.2	93.7	89.3	79.1	(92.6)	(89.9)				

( ) Preliminary

COMPARATIVE YEARLY SUMMARIES

	1947	1948	1949	1950	1951	1952	1953	1954
Year to Date	101.3	97.1	87.6	95.9	99.9	90.5	93.3	91.7
Year Average	101.7	92.1	83.7	95.8	98.0	88.6	92.3	

PAPERBOARD OPERATING RATIOS†

1954	Oct. 2 95	Oct. 9 93	Oct. 16 93	Oct. 23 93	Oct. 30 96
1953	Oct. 3 98	Oct. 10 97	Oct. 17 97	Oct. 24 97	Oct. 31 96

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1953	91	95	95	95	96	93	81	98	94	97	94	79	93
1954	89	89	90	88	90	89	74	92	88				

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint Exclusively.

Note: In the above tables *all* the ratios shown are on the basis of a normal 6 and 7 day capacity.

† Per cents of operation based on "Inch-Hours" reported on a 6-day basis to the National Paperboard Association.

Designed to Trim your Trimming Costs!

86" Model E. Undercut Trimmer showing side loading table. Loading table and air for floating pile are optional equipment.

SMITH & WINCHESTER
MODEL E
UNDERCUT TRIMMER
with Side Loading Table

Designed to Cut Trimming Costs

The S & W Model E Undercut Trimmer meets the needs of the modern finishing department for high production, accuracy and safe operation. For years the Standard Undercut Trimmer and the Model E have been giving outstanding service in the leading plants of the country.

Now, we offer the Model E with side loading table and air for floating pile, for fast, straight line operation, ease of handling stock and increased efficiency. The Model E is built in 56", 66", 76" and 86" widths.

WRITE FOR BULLETIN!

The **SMITH & WINCHESTER** *Manufacturing Company*
SOUTH WINDHAM, CONN.

PRICES

MARKET WOOD PULP

Fourth Quarter Contract Prices Per Short Air-Dry Ton

	Delivered Basis		Varying Freight Allowances†		
	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$75.00/$80.00	‡$60.00/$95.00*	§$78.00/$85.00§	§$80.00/ —	§$77.50/$80.00
Kraft, Bleached	142.50/147.50	145.00/150.00	$142.50/ —		$142.50/ —
Kraft, Blchd. Hdwd.	140.00/ —		$130.00/ —		
Kraft, Semi-bleached	130.00/132.50	130.00/ —	$132.50/135.00§	132.50/137.50*	
Kraft, Unbl.	95.00/105.00	105.00/135.00	*105.00/110.00*	*105.00/135.00*	
Sulphite, Blchd.	140.00/ —	140.00/ —	$137.50/140.00†	140.00/ — *	§135.00/142.50*§
Sulphite, Unblchd.	120.00/ —	120.00/ —	$114.00/125.00†	120.00/125.00*	
Sulphite, Unbl. Gl'sn.		124.00/ —	†125.00/ —		
Soda, Blchd.	140.00/ —				

‡ F.o.b. Shipping Point. § On Dock Atlantic Ports. * Freight allowed.

NEW YORK RAG MARKET

New Domestic Cotton Cuttings

Delivered Mill Basis

	Per 100 lbs.
No. 1 White Shirts	$13.50/$14.00
No. 1 Unblchd. Muslins	15.75/ 16.25
Blchd. & Unblchd. Underwears	nominal
No. 1 Light Silesias	7.50/ 8.00
No. 1 Blue Overalls	7.25/ 7.50
Percales	6.00/ 6.50
No. 1 Light Prints	5.50/ 6.00
Suntan Khakis	5.50/ 5.75
Cottonades	3.75/ 4.00
No. 1 Washables	3.00/ 3.25

Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
Mixed White	$2.75/$3.00
Cotton Pants & Overalls	2.00/ 2.25
Thirds and Blues, Repacked	1.65/ 1.75
No. 2 Roofing Rags	nominal

COTTON LINTERS

Memphis Market

F.o.b. Oilmills

	Nov. 2 Per 100 lbs.
Grade 1 n.a.	
2	$9.50/ $7.25
3 1st cut—felting	7.00/ 6.00
4	5.50/ 4.25
5	4.00/ 3.00
6 *2nd cut—chemical	3.00/ 3.00
7	3.00/ 3.00

*Based on 73% cellulose.

Bagging

(Prices to Dealers, F.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny	$4.25/$4.75
Foreign Scrap Burlap	3.00/ 3.75
Heavy Wool Tares	4.00/ 4.25
Austr. Wool Pouches	4.00/ 4.50
Domestic Manila Rope	4.50/ 5.00
Domestic No. 1 Sisal Strings	5.00/ 5.25

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point - Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal. See TRENDS.

	New York	Boston	Chicago	Los Angeles
	Nov. 8	Nov. 5	Nov. 4	Nov. 4
No. 1 Mixed Paper	$10.00/ 13.00	$12.00/ 13.00	$11.00/ —	$14.00/ —
No. 1 News	12.00/ 15.00	12.00/ 14.00	15.00/ —	13.00/ —
Overissue News	17.00/ 23.00	17.00/ 20.00	18.00/ 20.00	13.00/ —
Mill Wrappers	8.00/ 19.00	12.00/ 14.00	14.00/ —	13.00/ 14.00
Old Corrugated Containers	19.00/ 22.00	19.00/ 20.00	22.00/ —	20.00/ —
Super Resorted Kraft Paper	45.00/ 50.00	50.00/ 60.00	40.00/ —	45.00/ —
New Double Kr. Ld. Corr. Cuts	42.50/ 47.50	37.50/ 47.50	42.50/ 47.50	35.00/ —
New 100% Kraft Corr. Cuts	55.00/ 60.00	55.00/ 65.00	60.00/ —	— / —
New Br. Kraft Env. Cuts	70.00/ 80.00	65.00/ 78.00	65.00/ —	50.00/ —
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	50.00/ 60.00	55.00/ —	45.00/ 50.00
New Br. Kr. Bag Waste Unprntd	65.00/ 75.00	63.00/ 65.00	65.00/ 70.00	— / —
No. 1 Groundwood Shvs.	25.00/ 35.00	25.00/ 30.00	20.00/ 25.00	27.00/ 35.00
White Newsblanks	65.00/ 70.00	60.00/ 65.00	45.00/ —	55.00/ —
No. 1 Soft Wht. Shvs., coated	65.00/ 80.00	70.00/ 80.00	65.00/ —	— / —
Hd. Wht. Shvs.	105.00/110.00	95.00/110.00	100.00/105.00	100.00/105.00
Hd. Wht. Env. Cuts	125.00/130.00	110.00/130.00	105.00/ —	105.00/ —
Col. Tab. Cards	45.00/ 55.00	— / 60.00	50.00/ —	28.00/ 35.00
Manila Tab. Cards, bales	80.00/ 85.00	80.00/ 90.00	85.00/ —	65.00/ — §
No. 1 Col. Ledger	40.00/ 45.00	40.00/ 50.00	42.50/ —	27.50/ —
White Ledger	57.50/ 65.00	65.00/ 68.00	55.00/ —	45.00/ —
Mixed Book & Mag.†	18.00/ 20.00	18.00/ 22.50	12.50/ —	— / —
No. 1 Rep'd. Hvy. Books ‡	27.00/ 30.00	25.00/ 35.00	27.50/ —	10.00/ —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% groundwood. § Deld.

PRICES OF MATERIALS

Aluminum sulphate:
- cml. bags, c.l. wks. .....cwt. $1.85 / —
- iron-free, c.l. wks. .....cwt. 3.55 / —

Casein, acid prec.:
- dom. sh. pt. cl. .....lb. .27 / .32
- Arg. ex. dock, duty paid..... .21 / .22
- New Zeal., do. ..... .25 / .26

Caustic soda:
- c.l. wks. solid, 76% ....cwt. 3.85 / —
- flak. & grd. 400-lb. drums, c.l. 4.25 / —
- liquid 50% tanks .. 2.70 / —
- liquid 70% tanks .. 2.80 / —

China clay:
- dom. air-float, c.l. wks. .. ton 10.00
- water-washed, lump, filler..ton 11.00
- coating .....ton 17.60 /30.50
- Imported, ex. ship .. short ton 16.00 /30.00

Chlorine:
- single-unit tanks, works cwt. 2.93 / —
- multiple unit, 2-5 cars per yr. 3.83 / 5.00

Formaldehyde:
- USP, inh. dms. c.l. wks....lb. .0666/ —
- l.c.l., E. wks....lb. .071 / —

Lime:
- hydrated bags, wks..... tons 14.50 /15.50

Gum rosin:
- K, M, N, drms, c.l. Savan, cwt. 8.10 / 8.25

Rosin size:
- 70%, gum & pale grds., tank cars, south, sh. pt.....cwt. 6.75 / 6.85

Salt cake:
- dom. bulk, 100% anh. wks ton 24.00 /26.00
- imp. f.o.b. Saskatchewan..ton 16.00 / {Cana. funds}

Soda ash:
- light, 58%, bags, wks .. cwt. 1.65
- bulk .....cwt. 1.35

Sodium silicate, 40° Be.:
- tank-cars, wks. .....cwt. 1.00 / —
- drums, c.l. wks. .....cwt. 1.35 / —

42° Be. WW.
- tank-cars, wks. .....cwt. 1.60 / —
- drums, c.l. wks. .....cwt. 1.95 / —

Sodium peroxide:
- dms. c.l. E. of Miss. .....lb. .186
- l.c.l. do ..... lb. .191 / .201

Soybean, protein:
- chem. isol., wks. c.l. bags. lb. .25 / .25½

Sulphuric acid:
- 60° Be. cbys. c.l. wks. ..cwt. 1.75 / 2.00
- l.c.l. wks. .....cwt. 2.30 / 2.45
- tank-cars, wks. .....ton 16.30 /18.60

Sulphur:
- crude, c.l. mines, contract, long ton 25.50 /27.50
- f.o.b. vessels Gulf .....do. 27.50 /30.50

Sulphur dioxide:
- liquid, coml. cyl., wks. ....lb. .09
- multi-unit cars .....lb. .0535

Starches:
- corn, multiwalls, c.l. prod. plant:
- pearl ..... cwt. 6.39 / —
- white, dextrins .....cwt. 7.78 / —
- chlorinated .....cwt. 8.14 / —
- potato, Idaho, c.l. wks... cwt. 6.75 / —
- East, fr. all. 50 cents cwt.
- potato, Maine, f.o.b. wks. cwt. {Nominal 16.75 / —}

Talc:
- domestic, sacks, c.l. wks. ..ton 25.00 /30.00

Titanium dioxide:
- anatase, c.l. deld. E. bags ..lb. .22½/ .23
- l.c.l. deld. .....lb. .23½/ .24
- rutile, c.l. deld. .....lb. .24½/ .25
- l.c. deld. .....lb. .25½/ .26

Are Your Rag Cutters DOING Their Full Job?

TAYLOR-STILES RAG CUTTERS

—do a superior job in taking over much of the work of the beaters. Beaters that do not have to tear large pieces of woven fabrics apart do a better and faster job—in number of beaters required to meet production requirements—with a tremendous saving in total power consumption—a sharp saving in beater time.

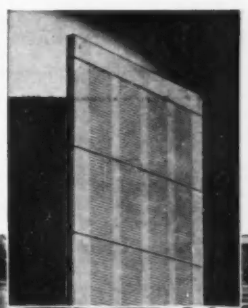
Let us tell you how leading fine writing paper and roofing paper mills are using this modern cutting equipment to their great advantage.

TAYLOR-STILES and COMPANY

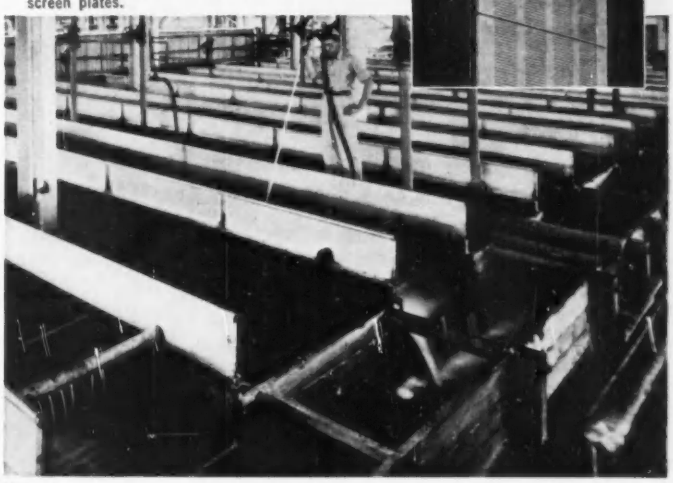
10 Bridge Street Riegelsville, New Jersey

MAGNUS THIN SHEET SCREEN PLATES

assure maximum flow of cleaner pulp



● Screen room of new St. Regis mill at Jacksonville, Florida, equipped with Magnus thin-sheet stainless screen plates.



HERE'S WHY:

MAGNUS SCREEN PLATES, made of chrome-nickel-steel or inconel, have a high-strength, thin-sheet design that's specially engineered to provide these three important advantages:

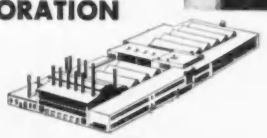
1. **INCREASED CAPACITY** The thin sheet eliminates relief milling, and with recommended arrangement, substantially increases capacity per plate.
2. **LONGER LIFE** Slots remain sharp, side walls highly polished for the life of the plate. There's greatly improved corrosion resistance, too.
3. **HIGH, SUSTAINED YIELD** Thin-sheet screen plates assure consistent, uniform quantities of cleaner pulp, with a minimum of maintenance. This means improved production at reduced operating costs.

Complete information is yours on request. Or if you like, we'll gladly have an engineer call.

MAGNUS METAL CORPORATION

Fitchburg, Massachusetts

Subsidiary of National Lead Company

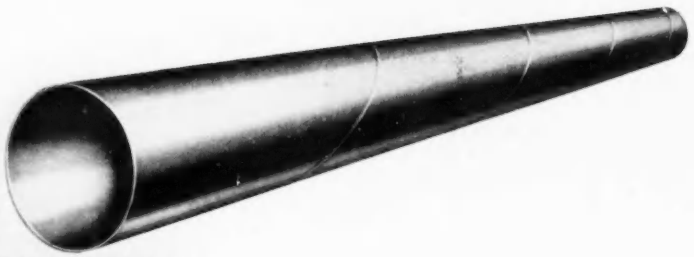


Metalworkers for the Paper Trade

SCREEN PLATES: BRONZE, CHROME-NICKEL-STEEL, AND INCONEL

VALVES: GATE, SWING CHECK, BLOW, GLOBE, ANGLE AND "Y"

HERE'S 3 CHANCES TO "HIT" PIPING COSTS



Armco Welded Steel Pipe gives you three opportunities to "knock down" the cost of plant piping.

1 **FIRST COST** is low because the wide range of diameters (6 to 36 inches) and wall thicknesses (9/64- to 1/2-inch) lets you match requirements exactly. There's no paying for more metal or capacity than you need. Further savings come from ordering fittings welded to straight pipe runs.

2 **INSTALLATION COST** is cut because mill-attached fittings reduce number of joints to be made. Faster installation means lower labor costs. And the long, 50-foot lengths of Armco Pipe may also reduce number of joints required.

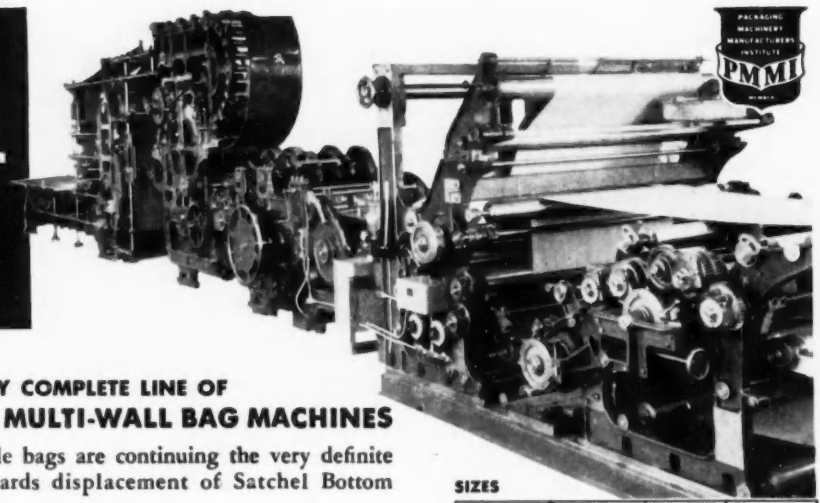
3 **MAINTENANCE COST** is lower because of fewer joints that reduce chance for leaks. And it's easy to guard against corrosion by specifying a galvanized coating.

Write for more details. Armco Drainage & Metal Products, Inc., Welded Pipe Sales Division, 3934 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

ARMCO WELDED STEEL PIPE

ARMCO

WEBER
MULTI-WALL
BAG MAKING
MACHINES



THE ONLY COMPLETE LINE OF
S.O.S.* MULTI-WALL BAG MACHINES

S.O.S. style bags are continuing the very definite trend towards displacement of Satchel Bottom style bags.

It is possible that you are placing yourself and your sales force in a very disadvantageous position by offering S.O.S. bags only in the smaller range of sizes and Satchel Bottom style bags in larger sizes — as compared to a *complete line* of S.O.S. bags produced by your competition.

If you manufacture pasted bottom, open mouth bags in styles other than the S.O.S. — convince yourself of the trend by determining the volume of business that has been lost in recent years to complete line S.O.S. bag manufacturers.

* Self Opening Style or Self Opening Square (pasted bottom, open mouth)

SIZES

MACHINE	WIDTH	BOTTOM	TUBE LENGTH
No. 7ACW	8 to 12"	3½ to 6"	14½ to 30"
No. 8A	7½ to 12"	4½ to 8"	17 to 39"
No. 9A	9 to 14"	4½ to 8"	17 to 39"
No. 10AR	10 to 17"	5 to 12"	20 to 42"
No. 11AR	10 to 19"	6 to 15"	24 to 64"

H. G. WEBER & COMPANY, Inc.
KIEL • WISCONSIN

REVOLUTIONARY *New* ROLL WINDER

Cuts

Perforates

Slits

We are contributing to the nation's defense program by providing a large part of our increased production facilities for building precision armaments. Civilian orders are filled on a reasonable time basis only.

- 100% ACCURATE COUNT
- *Automatically* STRIPS ROLLS FROM SHAFTS
- 50% MORE PRODUCTION
- POSITIVE PERFORATION— SHARP CLEAN EDGES FREE FROM LINT OR FUZZ

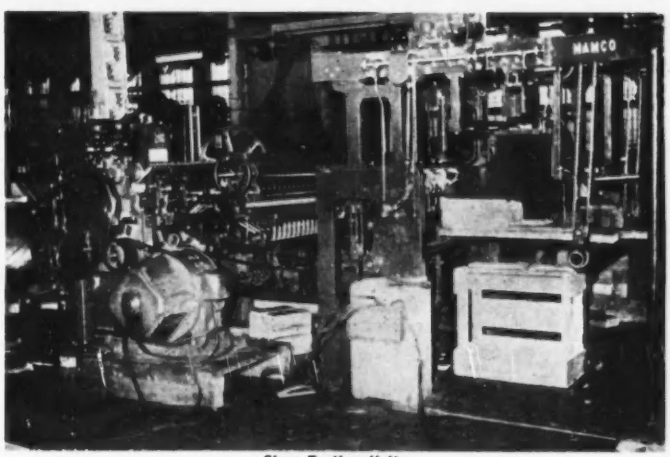
HUDSON-SHARP
MACHINE CO • GREEN BAY • WIS
Manufacturers of
Printers, Embossers, Folders, Interfolders, Waxers, Laminators, Wrapping Machines, Core Winders, Packaging Presses, Crapers and Napkins, Toilet Tissue and Paper Towel Units.

There is no lost motion with the new 60-B *continuous* toilet roll or towel roll winder. Operator simply places uncut core on mandrel and lowers it into receptacle. Machine then *automatically* does everything — cuts the core, winds the rolls to the desired count, cuts off and automatically starts to wind the next mandrel without slowing or stopping. Finished rolls are automatically stripped from mandrel and delivered to wrapping machine through conveyor. Produces positive sheet perforations and sharp, clean-cut edges. Average speed is 1000 feet per minute with constant tension unwind. Machine operates with equal facility on hard type of papers or those of multi-ply facial quality. Built in standard widths up to 81". Machine shown also has attached embossing unit. Write for complete details.

SHEETING, COUNTING, PILING, MACHINES for:

PULP — BOARD — FOIL — PAPER — CORRUGATED — SPECIALTIES

REGULAR SPEED — HIGH SPEED — CONTINUOUS-RUNNING, IF DESIRED



Shop Testing Unit

Our Engineering Department has specialized on converting problems exclusively since 1912 for Paper Mills, Printers, Envelope and Box Makers, etc.

Rollstands—Stationary and Movable
Sheeters—for plain and printed
MAMCO Counters and Markers
MAMCO Overlapping Deliveries
MAMCO Lay-Boys
MAMCO Continuous-Running Pilers
ERIE Automatic Lay-Boy
SIMCO Static Eliminator

MAY WE SOLVE YOUR PROBLEMS?

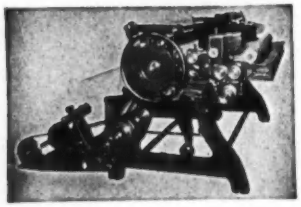
MAXSON AUTOMATIC MACHINERY COMPANY

98 GRANITE ST., WESTERLY **RHODE ISLAND, U. S. A.**

STANDARD & FACIAL TISSUE ROLL CONVERTERS

WITH OR WITHOUT

Latest Improvements: Parent Roll Drive with Automatic Tensioning — Velvet Smooth, Quick Accelerating Clutch



Slitters and Rewinders for Vulcanized Fibre and Heavy Board

•

Towel Interfolders for single interfold

•

Special Machinery

Rotary Card Cutters

•

Spiral Tube Machines for Toilet Roll Cores

•

Designing

DIETZ MACHINE WORKS

Factory-Office: 126 W. Fontaine St.

SINCE 1901 PHILADELPHIA 22, PA., U. S. A.

The *Sandy Hill* CREED

To keep informed on the problems of paper and pulp making;

and

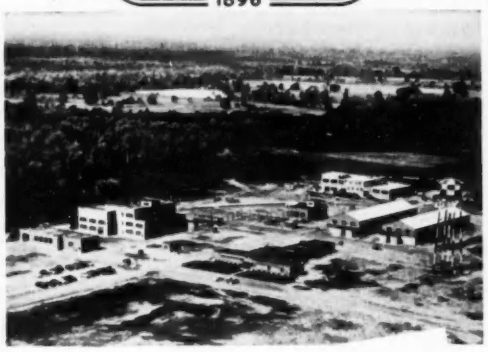
To engineer, develop and produce constantly better equipment to meet those problems...

The SANDY HILL Iron & Brass Works

Hudson Falls, N.Y.

OLDBURY®

1896



OLDBURY ELECTRO-CHEMICAL COMPANY

takes pleasure in announcing

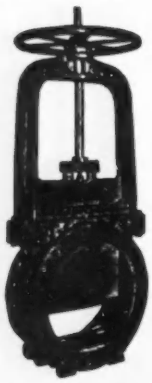
THE OFFICIAL OPENING

of an important new adjunct to its services

THE OLDBURY MISSISSIPPI WORKS

at

COLUMBUS, MISSISSIPPI



RECORD PAPER & PULP STOCK VALVES "BONNETLESS" SELF CLEARING - - - "RESIDUE POCKETLESS TYPE"

METALS — I.B.B.M.. all iron, bronze or stainless steels, body parts plain or rubber lined.

The photo of 24" Fig. 241 I. B. B. M. valve while illustrating the gate bottom wedge system for forced gate seating and "GUILLOTINE" edge for shearing fibre at seat also shows the packing box and yoke as separate units. Both adjustable.

• The "FAST THREADED" screw stem and ball bearing speeds valve operation.

• The packing box is extra deep, is adjustable and provided with specialized lubricated packings and special type gland and compression bolts.

• The yoke mountings are such that yokes for various methods of gate operation are interchangeable.

• Replaceable gate edge shoes are used in valves 10" and larger. These shoes are of special value when valves are installed stem and pipe horizontal.

"RECORD PRODUCTS EXTENSIVELY USED IN DEFENSE PROJECTS"

RECORD FOUNDRY & MACHINE COMPANY

LIVERMORE FALLS, MAINE, U. S. A.

PAPER TRADE JOURNAL

CLEARING HOUSE

PAPER TRADE JOURNAL

RATES FOR ADVERTISING (PAYABLE IN ADVANCE)

$.75 cents per line (6 words to line) minimum charge $3.75
—Additional charge of 70 cents if box number is used

Situation wanted advertisements can be repeated for ½ rate

Space in this section can also be purchased at $5.00 per column inch—(1" x 2¼")

Address replies to advertisements appearing under Box Number in care of **PAPER TRADE JOURNAL, 15 West 47th Street, New York 36, N. Y.**

HELP WANTED

POSITIONS OPEN

We can place—Manager corrugated box mfg.; managers, supts. and assit supts. for Fourdrinier mach. paper mills and Cylinder board mills.

Plant engineers, electrical and steam operating engineers, master mechanics, designers, draftsmen, power supervisors and steam engineers.

Wadding expert; board, carton and paper salesmen; chemists and technical directors; finishing foremen; asst. purchasing agent; accountant; machine tenders and back tenders; waste paper chemist.

If you are available for a good paying position in paper or pulp manufacturing or paper converting, it will pay you to have your application in our files. Negotiations are confidential. No fee to be paid unless you accept employment through us.

CHARLES P. RAYMOND SERVICE, Inc.
Phone: Liberty 2-6547
294 Washington St., Boston 8, Mass.
N-12

WANTED MACHINE TENDERS

Men who have had experience on Fourdrinier machine. Steady work, good living conditions and chances for advancement. Reply will be held in strict confidence. Give full experience in detail.

BEVERLY MILLS CO.
3rd & Hendricks Sts., Gary, Indiana
N-12

WANTED CHEMIST OR CHEMICAL ENGINEER

Graduate chemist experienced in coarse paper converting and laminating. Background in adhesives and coatings desirable. Chicago area manufacturer wishes to expand in laminated paper field. State age, experience and salary requirements. Box 54-391 Paper Trade Journal. D-3

JUNIOR CHEMISTS, JUNIOR ENGINEERS

Large kraft mill in eastern Virginia has excellent opportunities for technical men in Laboratory, Operations and Engineering Departments. Experience in pulp and paper desirable but not essential. Salary according to qualifications. Address Box 54-377 care Paper Trade Journal. N-19

WANTED—Chemical Engineer, 25 to 35, to be Technical Supervisor of medium sized specialty paper mill. Excellent opportunity for advancement. Send resume of personal data, education and experience to Box 54-397 care Paper Trade Journal. D-3

HELP WANTED

PAPER EXPORTER

Old established and prominent paper export firm seeking man experienced in this field, for responsible position. State full qualifications and experience. Replies confidential.

Address Box 54—care Paper Trade Journal.

MASTER MECHANIC

FOR TWO MACHINE PAPERBOARD MILL. MUST HAVE STRONG TRADES BACKGROUND WITH SUCCESSFUL RECORD AS MASTER MECHANIC IN THE PAPER OR BOARD INDUSTRY. STATE AGE, SALARY EXPECTED, AND COMPLETELY OUTLINE EDUCATION, TRAINING, AND EXPERIENCE. REPLY WILL BE HELD CONFIDENTIAL. ADDRESS BOX 54-388 CARE PAPER TRADE JOURNAL.
N-19

GENERAL SUPERINTENDENT OF BOARD MILLS

Required to supervise operations of 3 paperboard plants located in the East. Broad experience needed in cylinder machine production of white patent-coateds, machine clay-coateds, bleached manila-lined chip, single manila-lined chip, full bending chip, and kraft-lined boards. Salary commensurate with qualifications. Send complete resume of background, education & earnings to Box 54-353 care Paper Trade Journal. N-19

WANTED BACK TENDERS

Men who have had at least 5 years experience on Fourdrinier machine, steady work and chance for advancement. Reply will be held in strict confidence. Give full experience in detail.

BEVERLY MILLS CO.
3rd & Hendricks Sts., Gary, Indiana
N-12

WANTED—SUPERINTENDENT with experience in the manufacture of fine papers. Mill located in New England. Please submit complete resumes. Address Box 54-390 care Paper Trade Journal. N-19

HELP WANTED

SALARIED POSITIONS $5,000 to $35,000. We offer the original personal employment service (established 44 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars. R. W. BIXBY, INC. 663 Brisbane Bldg., Buffalo 3, N. Y.
N-12

ENGINEER

Have opportunity for a pulp and paper mill engineer to take part in expansion and development program. Must be experienced and capable for design, drafting, equipment installations and foundations. Excellent location in Eastern Canada. All replies confidential. Give detailed résumé and salary required. C/o Box 54-385 care Paper Trade Journal. N-19

CHEMIST OR CHEMICAL ENGINEER

Opportunity available for Chemist or Chemical Engineer in an expanding pulp and paper mill located in the Middle Atlantic States. Age 25-35 years with several years experience in pulp and paper chemicals and fibers. Good salary with excellent opportunity for advancement. Send resume of educational background and industrial experience. All replies confidential. Address Box 54-338 care Paper Trade Journal.
N-19

GRADUATE ENGINEER WANTED

Graduate Mechanical, Chemical or Electrical Engineer under 35 with some pulp and paper mill experience. Southeastern States. Send resume and expected salary. All replies held in confidence. Reply Box 54-369 care Paper Trade Journal.
TF

CHEMIST OR CHEMICAL ENGINEER—Opportunity available in paperboard mill located in New York State. Able to assume responsibility for operation of testing and research laboratory. Salary commensurate with experience and ability. Include resume of education and practical experience in reply. Address Box 54-396 care Paper Trade Journal. N-12

COMPLETE PAPER MILL FOR SALE—READY TO OPERATE

Including Real Estate and Water Power 700 h.p.

1—P & J 156" ball bearing equipped Fourdrinier Section, one set of presses, 10 dryers 48" diameter x 151" face, Pope Reel, 2 enclosed drives, line shafting and vacuum Pumps. This machinery is all rebuilt and could be the basis of a high speed Fourdrinier Machine.

1—76" Single Cylinder Machine, 1 press section, 8 dryers 48" diameter x 68" face, 1—24" diameter lead Dryer, 2 bowl reel, 1 drum winder, mortise gear drive line shafting with variable speed motor drive. Complete with pumps.

1—58" Single Cylinder Machine, 2 press sections, 13 dryers 36" diameter x 54" face, drum reel, shear cut winder, mortise gear drive, line shafting with variable speed motor drive 9 roll calender stack. Machine complete including pumps and agitator.

1—COWLS HYDRASLUSHER MODEL 10 SD 10.

1—NOBLE & WOOD MONARCH JORDAN ANTIFRICTION BEARINGS WITH 100 H.P. MOTOR AND CONTROLS.

MACHINERY ALSO FOR SALE INDIVIDUALLY.

Ross Paper Machinery Co., 265 Passaic St., Newark 4, N. J.

TF

HELP WANTED

WANTED — Designing Draftsman familiar with paper mill equipment and specialties. Location New England. Address Box 54-389 care Paper Trade Journal. N-12

SALESMAN—Take complete charge Paper Mill Machinery and Equipment sales office on West Coast. Give references, experience, salary expected in first letter. Address Box 54-375 care Paper Trade Journal. N-12

SITUATIONS WANTED

PROJECT ENGINEERING EXECUTIVE

Experienced in organizing and managing new paper or converting mill construction projects, available in immediate future to accept new position on permanent or short term basis. Thirteen years professional experience includes directing design and construction of complete paper mill; improvement studies and modernization of paper machines, stock preparation systems, coating and converting mills, de-inking plants, power plants. A thorough understanding of paper production, plant maintenance, labor relations and cost control. Technical graduate. Will consider foreign project. Address box 54-376 care Paper Trade Journal. N.C.—N-19

SUPERINTENDENT twenty-eight years of practical experience on large rapid running eight-cylinder machines manufacturing high grade Folding Boxboard, white patent coated, bleached manila, solid white, and many other grades from virgin pulp and waste papers. Excellent references. Address Box 54-368 care The Paper Trade Journal. N-5

PLANT MANAGER-EXECUTIVE — Seeks change for opportunity. Excellent record in production; cost control and labor relations. Address Box 54-382 care Paper Trade Journal. N-26

SUPERINTENDENT — Cylinder and Fourdrinier. Folding and Setup Board, Test, Liner, Lath, Tube and Corrugating Mediums. Age 47 yrs. Address Box 54-386 care Paper Trade Journal. N-19

CONTROLLER—20 years Paper and Paper Converting. Excellent administrator. Will relocate. Address Box 54-393 care Paper Trade Journal. N-12

FOR SALE

FOR SALE

Moore & White 105" Sheeter.
55" - 65" Sheridan Power Cutters.

BARCLAY MACHINERY CORP.
175 Wooster St., N. Y. C. 12
GRamercy 7-8300 N-12

FOR SALE
96" BELOIT FOURDRINIER PAPER MACHINE

Ball bearing Fourdrinier — New 1948. Wire 96" x 71 ft. 2" — 3 press sections—22 Dryers 92" face x 42" diameter—6 roll Calender Stacks — 2 bowl Reel — 2 drum Winder — Complete drives and Terry Steam Turbine—All stocks and water pumps. All motors with starters included — large lot of spare parts. Operates 450 FPM.

Full description and photograph furnished on request.

ROSS PAPER MACHINERY COMPANY
265 Passaic Street, Newark 4, N. J.
Tel: HUmboldt 2-2177 TF

FOR SALE

"2—Fales 40" Mod. B Slitters, good condition — without knives — Located at Plymouth Cordage Co. —Warwick, Virginia. N-19

We Invite

SPECIALTY COATING JOBS

for the trade

SOLVENT OR EMULSION TYPE

COATINGS—CLEAR OR PIGMENTED

Roll widths up to 60"

Plant located in Chicago.

PAPER CONVERTING & FINISHING CO.

118 N. Ada St., Chicago 7 Ill.

TF

FOR SALE—60" and 72" Cameron Slitter No. 10 with Elec. Eye; 60" Moore & White Sheeter with Layboy; Potdevin F & S Bag Machine; Rutherford 32" Coaters; 40" Parry Liner with or without Rewinder; No. 6 Brightwood. Many Set-up, Folding and Corrugated Box Machines. Address Box 54-384 care Paper Trade Journal. TF

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon Laboratory Coating and Treating and Flat Ream Measuring and Converting Machines. New Improvement. THE MAYER MACHINE COMPANY, INC., 1313 Buffalo Road, Rochester 11, N. Y. TF

FOR SALE
KIDDER ANILINE PRESS

PRACTICALLY NEW 42" 4-color Aniliner purchased in May, 1952. This press is offered for sale only because it has been replaced with a 6-color machine. Kidder's current price on the same model is $37,000 FOB Dover, N. H.; we are offering this equipment complete at $30,000 FOB our Atlanta plant on an "as is—where is" basis subject to prior sale. It is available for inspection by responsible printers. No agents.

POLLOCK PAPER CORPORATION
Dallas, Texas

N-12

FOR SALE

BARKING DRUM
1—10′ x 30′.

BEATERS
2—1500 lb. Dilts iron tub beaters, rolls 52″ diameter x 42″ face.
1—Noble & Wood Beater roll and stand. 70″ diameter x 44″ face.
2—Breaker Beaters—58″ diameter x 48″ face rolls.
2—1500 lb. rag beaters, Valley Iron, bandless rolls, 54″ x 48″, cast iron tubs, with motors.
Write us regarding your requirements.

BREAKER STACK
1—110″ face 2 roll breaker stack, with frames.

CALENDER STACKS
1—3 roll 30″ face friction Calender Stack (Holyoke), 2 iron rolls, 1 cotton roll and 1 spare cotton roll.
1—4 roll 72″ Calender Stack. (Extra heavy duty).
1—3 roll 60″ Friction Calender Stack, Two iron rolls and 1 Paper or Cotton Roll.
1—5 Roll 86″.
1—5 Roll 90″.
1—9 Roll—86″ face, Super Calender Stack.
1—9 roll—100″ Calender Stack.

CHIPPERS
1—96″ Murray 6 knife chipper, complete with 300 H.P. synchronous motor.
1—88″ Carthage 4 knife Chipper.
1—96″ Murray 4 knife Chipper—anti-friction bearings.
1—84″ Carthage 4 knife Chipper.

CLASSIFINER
1—Dilts Classifiner, practically new, with motor.

CORE MACHINES
1—Dietz Core Machine (Tube Winder).

CREPER AND WAXER
1—80″ Creper and Waxer, excellent condition, details on request.

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.

CYLINDER MOLDS
2—30″ diameter x 72″ face.
1—30″ diameter x 92″ face.
2—36″ diameter x 54″ face.
2—36″ diameter x 84″ face.
2—36″ diameter x 86″ face, with vats.
6—36″ diameter x 110″ face.
1—48″ diameter x 117″ face.
2—36″ diameter x 136″ face with anti-friction bearings.

DIGESTERS
2—14′ Globe Rotary Digesters.

DRIVES
1—Jones Reducer 75 h.p.—30.8 to 1.
1—Jones 21—H.P., ratio 10 to 1.
1—#3 Vertical enclosed Reeves Drive.
1—#4 Reeves Drive.
1—Vaughn 100 H.P. enclosed drive Ratio 7 to 1.
2—Cleveland agitator drives, for chests.
2—Waterbury Hydraulic Variable speed line shaft drives (from 40 to 100 h.p.).

DRYERS
1—48″ diameter x 96″ face (Jacketed Lukens type) w.p. 80 lbs.
12—48″ diameter x 144″ face.
4—48″ diameter x 132″ face.
1—Complete unit, consisting of 6 dryers, 36″ diameter x 38″ face, including frames, gears, anti-friction bearings.
5—24″ diameter x 54″ face, with bearings.
1—28″ diameter x 48″ face.
5—28″ diameter x 80″ face with anti-friction bearings.
8—36″ diameter x 44″ face with frames, gears & bearings.
1—36″ diameter x 67″ face.
2—36″ diameter x 72″ face.
60—36″ diameter x 73″ face, gears and bearings.
6—36″ diameter x 76″ face.
1—36″ diameter x 90″ face.
2—36″ diameter x 120″ face.
1—48″ diameter x 70″ face.
2—48″ diameter x 88″ face. Frames, gears, bearings and felt equipment.
1—48″ diameter x 100″ face.
1—48″ diameter x 106″ face.
2—Dryers 48″ diameter x 134″ face.
1—48″ diameter x 144″ face.
3—60″ diameter x 86″ face.

DYNOFINER
"Rice Barton," details on request.

EMBOSSING CALENDERS
Write us regarding your requirements.

EXTRACTOR ROLLS
1—Extractor roll, 26″ diameter x 104″ face, with rubber couch roll.
1—Rice, Barton & Fales Extractor Roll, 26″ diameter x 104″ face, with rubber couch roll.

FLAT SCREENS
2—12 plate Flat Screens.
2—14 plate Packer, roller shoes.
1—14 plate flat screen, Packer, roller shoes with scraping device, practically new screen.

GEARS
Write us regarding requirements.

GRINDERS
2—4 pocket Grinders.
2—3 pocket Grinders.

HEAD BOX & INLET
1—Valley Iron Works Inlet complete with head box. 156″, all stainless steel

HYDRAFINER
1—Dilts Hydrafiner with motor.

JORDANS
1—#2 Emerson anti-friction bearing.
1—#1 Emerson, iron plug, new spare filling.
1—Noble & Wood monarch Jordan, anti-friction bearings direct connected to 100 HP motor.

LABORATORY EQUIPMENT
Write us regarding your requirements.

LAMINATING MACHINE
1—72″ Hudson Sharp laminating machine reverse coater.

MISCELLANEOUS
1—2 ton Philadelphia Chain Block.

MOTORS
2—150 H.P. Westinghouse 495 R.P.M. 3/60/440, with starter.
1—50 H.P. Upright motors, air cooled 3/60/440, 1150 R.P.M. (Ball Bearing).
Write us regarding your requirements.

PAPER MACHINES
1—54″ single cylinder complete.
1—68″ single cylinder complete.

PRESSES
Write us regarding your requirements.

PRESS ROLLS
3—Chilled iron, chrome plated, 16″ x 100″
2—Chilled iron, chrome plated, 12″ x 100″
2—Chilled iron, chrome plated, 10″ x 74″
2—Chilled iron, chrome plated, 14″ x 74″

PULLEYS
Various cone and assorted pulleys.

PULPERS
1—Jones Pulper.
1—Cowles side pulper size 10SD10.

PUMPS
5—Shartle Bros. Agiflow circulating pumps.
Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.

RAG CUTTERS
Write us regarding your requirements.

REELS
1—86″ 2 bowl reel.
1—84″ 3 bowl revolving reel.
1—100″ Rice Barton 2 bowl Reel, heavy duty.
1—123″—3 bowl revolving reel.
1—134″—2 drum.
1—72″ Downingtown Reel, 2 bowl.

REFINERS
1—12″ Wiener Refiner.

ROLLS
1—Rubber Couch Roll—20″ diameter x 108″ face.
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
1—Bird, 36″ diameter cylinder x 50″ long plate, enclosed drive.
Write us regarding your requirements.

SAVEALLS
4—Thompson Washers 36″ x 110″ cylinder molds.
2—Sandy Hill, 36″ diameter x 88″ face cylinder molds, anti-friction bearings and couch rolls.

SCREEN PLATES
Write us regarding your requirements.

SHAKER ROLLS
1—134″ face x 14″ diameter with Messenger bearings.
1—104″ face x 14″ diameter with Messenger bearings.

SHEETERS
1—72″ Hamblet Sheeter.
1—140″ Hamblet (Simplex).
1—140″ Hamblet (Duplex).
1—100″ Hamblet Sheeter (Duplex) with layboy, backstand, etc.

SHOWERS
5—Bird showers 96″ face.

SLITTERS & WINDERS
1—32″ Cameron—Type 24-3A.
1—36″ Cameron—Type 44-W (Winder only.)
2—42″ Cameron—Type 6.
1—42″ Cameron—Type 24-2A.
1—50″ Cameron—Type 6.
1—50″ Cameron Type 24-2AL.
1—56″ Cameron—Type 24-2A.
1—62″ Cameron—Type 10.
1—62″ Cameron—Type 40-1-AF.
1—62″ Cameron (duplex)
1—72″ Cameron—Type 10.
1—92″ Cameron—Type 12.
2—86″ Two Drum Moore & White, 50′ diameter rewind.
1—104″ Beloit two drum winder.
1—108″ Sandy Hill winder.
1—120″ Moore & White, 4 drum winder

STOCK PUMPS
1—8 x 18 Shartle Triplex.
2—10 x 10 Beloit Duplex, low type.
2—10 x 20 Shartle Triplex.
1—12 x 20 Shartle Triplex.
Advise as to your requirements

SUCTION BOXES
Write us concerning your requirements.

SUCTION PRESS ROLLS
1—Sandusky Suction Press Roll 130″ drilled face x 14 7/8″ diameter.
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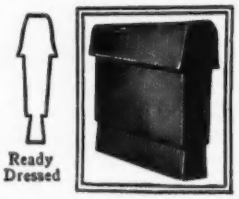

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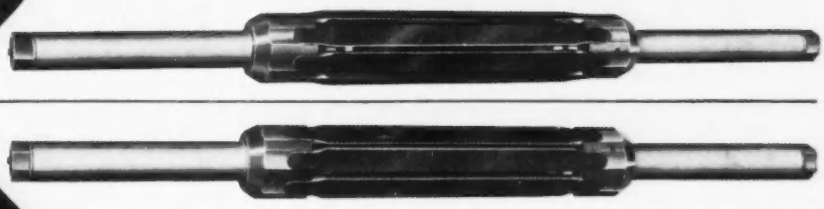

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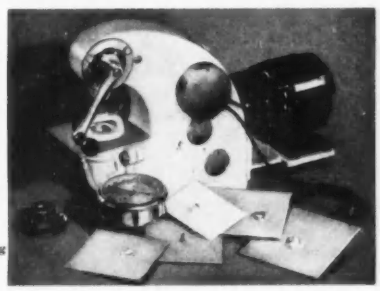

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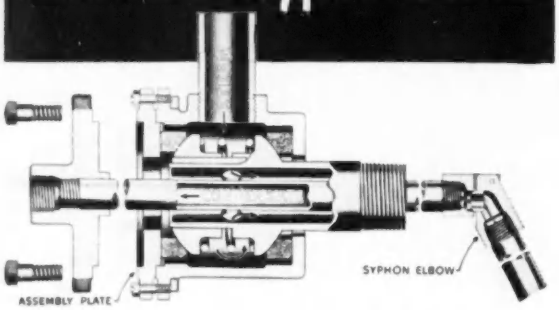

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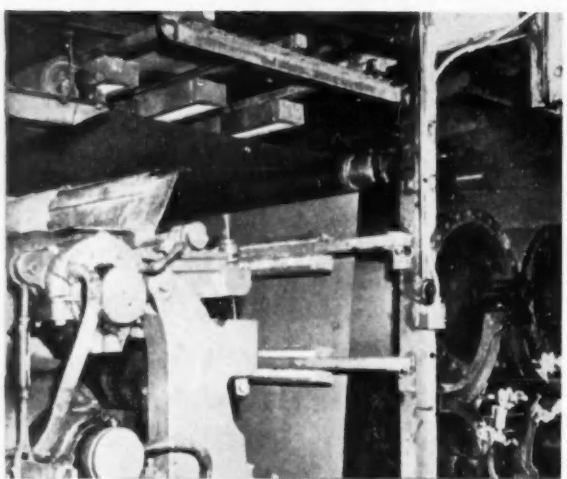

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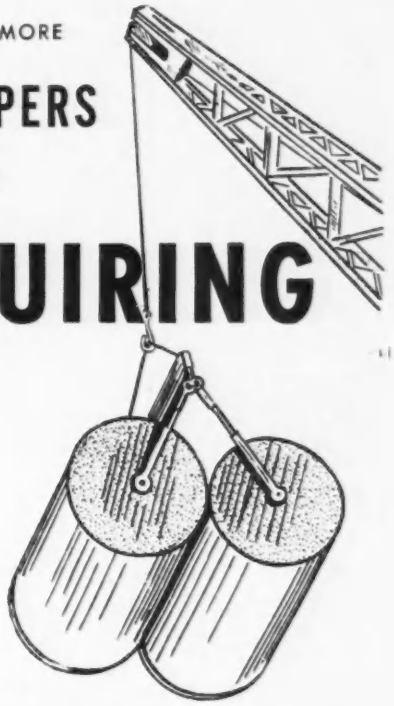

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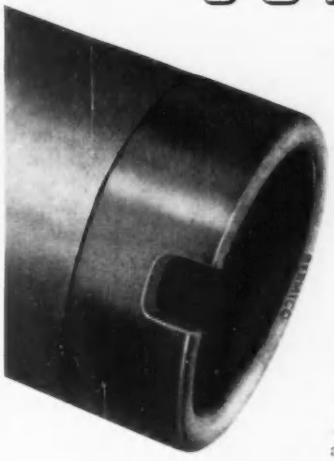

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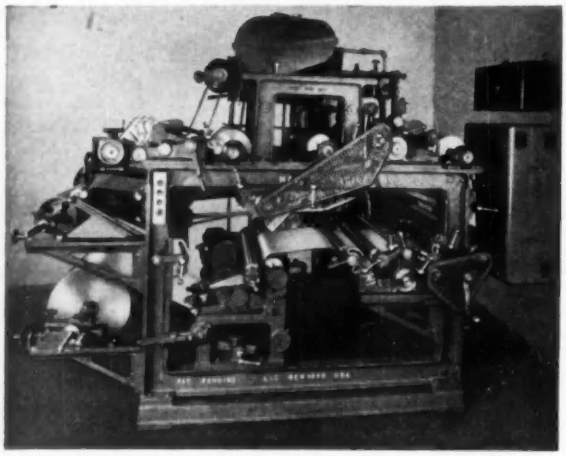

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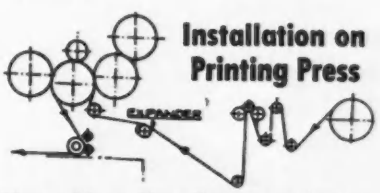

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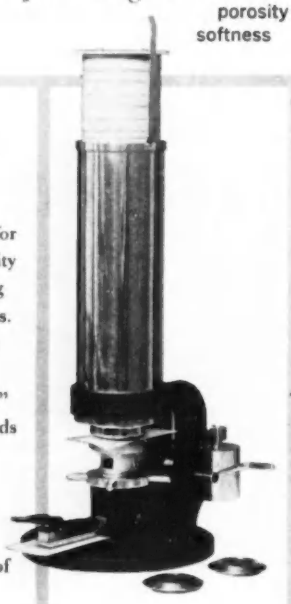

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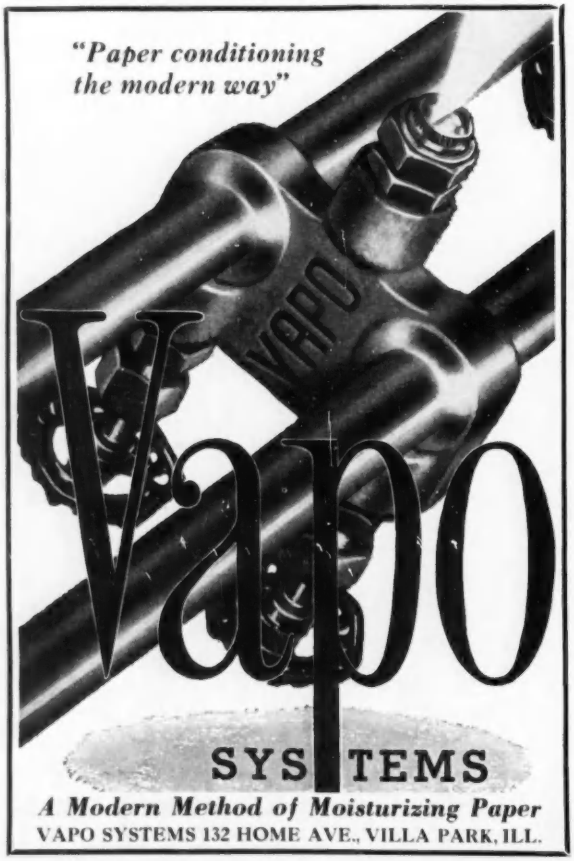

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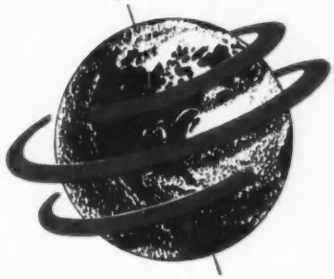

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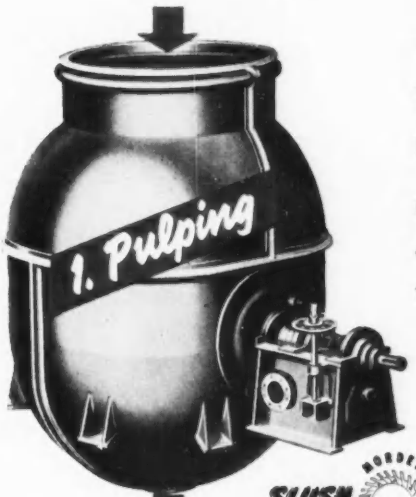

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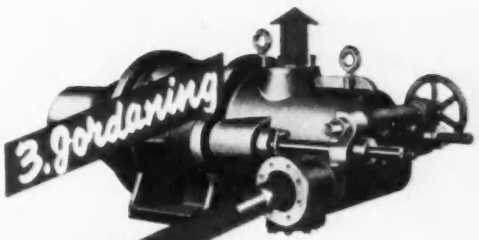

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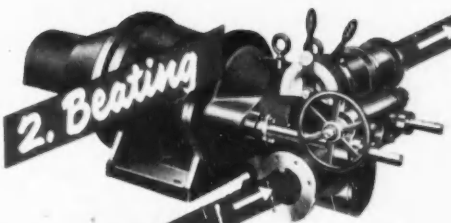

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